SEATTLE DEPARTMENT OF TRANSPORTATION

DIRECTOR'S RULE

2004-02

Subject: Street and Sidewalk Pavement Opening and Restoration	**Page 1 of 46** **Supersedes:** Director's Rule 94-8 Rev. 1, published February 1998 **Publication:** August 23, 2005 **Effective:** August 30, 2005
Type of Rule: Code Interpretation	**Ordinance Authority:** SMC 3.12.020
Code and Section Reference: Seattle Municipal Code chapters 15.26, 15.32, 21.16	**Approved:**  Grace Crunican, Director Seattle Department of Transportation

SDOT
Seattle Department of Transportation

Gregory J. Nickels, Mayor
Grace Crunican, Director

August 23, 2005

A MESSAGE FOR ALL WHO WORK IN THE STREET RIGHT-OF-WAY

More than 4,000 openings are made in Seattle's streets every year. This Rule directs how properly to restore the street so that pavement life isn't artificially shortened as the result of necessary construction work.

This update to the Rule is simpler to understand and easier to interpret than the previous edition. It is in harmony with other City standard plans and specifications. Moreover, it incorporates advances in restoration practices that protect city streets at affordable cost.

Seattle Department of Transportation (SDOT) offers free training as well as consultation in the office or in the field concerning specific pavement restorations. Copies of the Rule are available at no cost at the Street Use and also the Department of Planning and Development permit counters. The Rule is on-line at:

http://www.cityofseattle.net/transportation/stuse_pavementopen.htm

The Pavement Opening and Restoration Rule is developed and maintained by SDOT's Pavement Engineering and Management Section under the oversight of the citywide Utilities Coordinating Council. It is interpreted and enforced by permit reviewers and inspectors from SDOT's Street Use Division.

This updated Rule is one component of SDOT's effort to update and modernize its requirements and procedures. Other related efforts include updates to the citywide traffic control manual and the street design guide, as well as new street use permitting systems and procedures for coordinating work in the right-of-way.

It would cost over $4 Billion to replace Seattle's pavements. Preserving Seattle's pavements by restoring them to a high standard helps all who use the streets —commercial businesses, those who move freight to and through the city, residents and commuters who drive every day, and those who ride bicycles or walk. All of us at SDOT look forward to working with our partners from the public and private utilities and their contractors to assure Seattle residents and businesses that their streets are opened and then restored as efficiently as possible.

Sincerely,

Grace Crunican, Director
Seattle Department of Transportation

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1.0 PURPOSE, ADMINISTRATION, REFERENCES: Pursuant to the Seattle Municipal Code (SMC) Titles 3 and 15, and except as permitted otherwise by other SMC titles, the Seattle Transportation (SDOT) Director (herein called "SDOT Director") hereby adopts the following Rule that provides for uniform opening and restoration of street right-of-way, to ensure the integrity of both the pavement infrastructure and other surface street right-of-way features.

1.1 Purpose: This Rule, known as the Pavement Opening and Restoration Rule (PORR), describes the requirements that permittees, contractors, and city crews shall meet when making or restoring openings within the street right-of-way.

1.2 Administration, interpretation, and enforcement: SDOT Street Use Division interprets and enforces the PORR under the authority of the SDOT Director. The Street Use Division permit counter is located in Key Tower, Suite 3700, 700 Fifth Avenue, Seattle, WA 98104. The permit counter is open 8 A.M. to 5 P.M. Monday-Friday. The Street Use Division may be reached by telephone at 206-684-5253. Street Use Division field inspectors are authorized to interpret and enforce the PORR in the field.

1.3 Permit for street opening: A permit shall be obtained prior to opening the street right-of-way. SDOT crews are exempted from obtaining a permit.

> **1.3.1 Plans for proposed work:** Plans for the proposed work must be submitted to the SDOT Street Use Division for review prior to a permit being issued for the work.
>
> **1.3.2 Emergency repairs:** When a street opening is necessary for health or safety reasons that could not be anticipated, a permit is still required for which application shall be made on the same day or the next business day after the opening is started.

1.4 Role of the Street Use Inspector: The Street Use Inspector inspects work performed under permit. The Inspector may be on the job site at any time. The Street Use Inspector is a resource to permittees and contractors. The Inspector conducts field investigations, interprets and applies standards, and troubleshoots and assists with field changes. The Inspector monitors for compliance with permit conditions, creates accurate as-built drawings, helps protect existing utilities, and assists with traffic control, pedestrian access, excavation shoring, street opening, backfill and restoration, and public safety.

1.5 Permittee's right to request administrative review of Rule interpretations: A permittee may request that administrative interpretations of this Rule be reviewed pursuant to SMC 15.04.112. A request for review must be initiated by the permittee within ten (10) working days of receiving notice of the administrative decision that is to be reviewed.

1.6 Memoranda of agreement with utilities in good standing: With public and private utilities that frequently open pavements in Seattle and that have an established history of compliance with the Pavement Opening and Restoration Rule, SDOT may enter into memoranda of agreement that allow *inspection procedures that depart in minor respects from standard*. Such memoranda of agreement are to be limited to openings and restorations considered minor in scale, and relatively frequently and repetitively performed.

1.7 References: This Rule incorporates by reference as if fully stated in this Rule the following documents, in the edition or version current on the effective date of this Rule, and as hereafter amended:

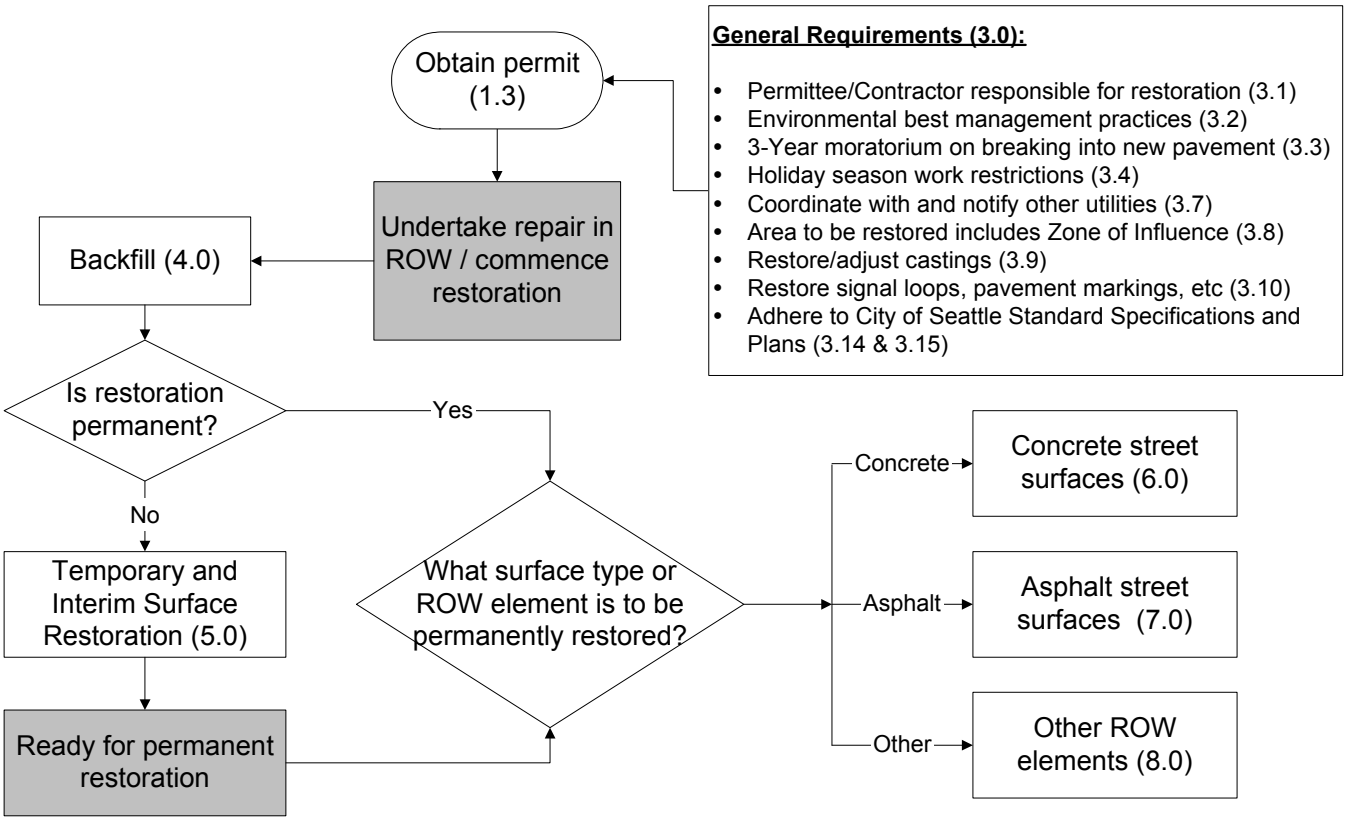
- Seattle Municipal Code (SMC), Chapters 15.26, 15.32, and 21.16.
- The City of Seattle Standard Plans and Standard Specifications for Road, Bridge, and Municipal Construction, referred to herein as the "Standard Plans" and "Standard Specifications." Complete, up-to-date copies of the Standard Plans and Specifications are available on-line at: http://www.ci.seattle.wa.us/util/Engineering/Standard_Plans_&_Specs/index.asp . The permittee or contractor shall refer to the current edition for construction requirements.
- The City of Seattle Traffic Code ((SMC) Chapter 11), and The City of Seattle, Traffic Control Manual for In-Street Work.
- Regional Road Maintenance Endangered Species Act (ESA) Program (RRMP) Guidelines. Program documents are on-line at: http://apps01.metrokc.gov/www/kcdot/roads/esa/index.htm .
- The City of Seattle Street Improvement manual. December 1991. Authorized by SMC 3.06.040 and 3.12.020. (An update to the Street Improvement manual is anticipated to be issued in 2005.)

The order of precedence for the various references is as presented above. Future editions of these references may have some different requirements from the editions that were current when this Rule was updated. When such a difference is discovered, the latest requirement in the updated reference takes precedence over the corresponding requirement in this Rule.

1.8 Overview: Figure 1 provides an overview of the Pavement Opening and Restoration Rule. A similar, more detailed figure is included in each section of this Rule. The figures summarize the requirements of this Rule, but do not in and of themselves replace the textual description of them.

FIGURE 1

Street and Sidewalk Pavement Opening and Restoration Rules (PORR)
Overview of Rules



2.0 DEFINITIONS: The following terms, phrases and words shall have the meaning given below.

Alley	A roadway not designed for general travel and primarily used as a means of access to the rear of residences and business establishments.
Areaway	A space below the level of the sidewalk, covered or uncovered, affording room, access or light to a building.
Arterial	Every street, or portion thereof, designated as such in Exhibit 11.18.010 of the Traffic Code. ***Tip for determining in the field if a street is an arterial:*** *if the centerline is painted yellow, the street is an arterial. Ask the Street Use Inspector if more information is needed.*

Asphalt Concrete (AC)	A controlled mixture of asphalt binder and aggregate.
Backfill	Material used to fill an excavation, or to support a foundation or roadbed, or both.
Base Course	The rigid or flexible layer of aggregate, oil-treated aggregate, Portland cement concrete, treated soil or soil-aggregate that rests upon the subbase or, if no subbase, upon the subgrade.
Bituminous Surface Treatment (BST)	Treating existing crushed rock, screened gravel, or bituminous roadway surfaces with liquid asphalt and covering with a mineral aggregate thoroughly cemented to the roadway to obtain a wearing course with good riding and non-skid qualities.
Bus Route	A street upon which scheduled public transit service is maintained, including a turn-around street. ***Tip for determining in the field if a street is a bus route:*** *if the street has bus stop signs (or trolley wires), it is a designated bus route. Ask the Street Use Inspector if more information is needed*.
Casting	A metal or concrete frame, lid, cover, or similar surface opening or appurtenance associated with an underground vault, pipe, basin or monument, located in the right-of-way.
Central Business District (CBD)	The portion of the city bounded on the north by Denny Way; on the east by I-5 and Boren Avenue (northerly portion); on the south by South Royal Brougham Way; on the west by Elliott Bay.
Cold Mix Asphalt	An asphalt concrete mixture designed to be placed at ambient temperature without the addition of heat.
Concrete	See "Portland Cement Concrete (PCC)".
Concrete Paving Panel	The contiguous surface bounded by joints in a concrete surface street.
Contractor	An individual, partnership, corporation, firm or joint venture contracting with an owner, permittee or their representative to do work within the street right-of-way.
Controlled Density Fill (CDF)	A prepared mixture consisting of Portland cement, fly ash, sand, water and entrained air used for backfill (reference Standard Specifications, Section 9-01.5).
Cut	An opening in the right-of-way.
Decorative/Special Pavements	Any surface composed of cobblestones, paving stones, brick, unit pavers, tiles, concrete or asphalt pavement colored or patterned by additives, proprietary products, or special surface treatments.
Drip-line	An area encircling the base of a tree, the minimum extent of which is delineated by a vertical line extending from the outer limit of a tree's branch tips down to the ground.
Driveway Landing	A depression in a concrete curb and the adjacent road surface that provides vehicular access to adjacent property beyond the street right-of-way.

Environmental Critical Area	An area identified, designated and mapped by the Department of Planning and Development because of landslide potential, watershed criticality, or other concerns, and to which special rules apply.
Excavation	A person-made cut, cavity, or depression in the earth's surface, formed by earth removal.
Flexible Base	A base constructed of native material, aggregates, or asphalt treated base or equivalent.
Historic Landmark District	Any district designated or created by City ordinance as a Landmark District.
Mineral Aggregate	Rock or gravel or sand or a blend thereof, which may or may not be crushed, screened to size and blended for use in road, bridge and municipal construction. (See Standard Specifications, Section 9-03.16 for aggregate types.)
Non-Arterials	All streets not designated as arterials. As a rule, non-arterial streets do not have yellow centerline pavement markings. Pavement restoration requirements may differ depending on whether the non-arterial street is residential or industrial/commercial. The Street Use Inspector can determine and clarify the type of street using the Seattle Comprehensive Transportation Program Street Classification Maps (July 1984), or an update.
Oil Mat	Any surface composed of dirt and rock that has had asphalt liquids applied for dust control.
One Call	A centralized telephone number (1-800-424-5555) connected to a service that provides underground utility locations.
Opening	The removal of street right-of-way surfacing, typically to accommodate excavation and to allow access below the pavement.
Pavement Structure	The combination of subbase, base course, and surface course, as applicable, placed on the subgrade to support and distribute the traffic load.
Permittee or Contractor	An individual, firm, contractor, corporation, company or other entity authorized by permit, including a contractor hired by one who obtains a permit, to perform opening or restoration in the street right-of-way.
Portland Cement Concrete (PCC)	A mixture of Portland cement, aggregate, sand and water, with or without additives.
Pre-level	Adjustment of the cross-section, elevation and grade of a road surface prior to laying down the wearing or top course of pavement.
Reconstruction	The complete removal and replacement of the entire street.
Restoration	Reconstructing an opening in the street right-of-way and its attendant excavated area.
Rigid Base	A base constructed of concrete or stone/masonry or any combination of the two.

Sidewalk	A paved area in the street right-of-way intended for pedestrians.
Shoulders	That portion of the street right-of-way adjacent to an improved driving surface without curbs.
Street area	That portion of the street right-of-way improved for vehicular travel and use.
Street Right-of-Way	A strip of real property secured and reserved for public transportation purposes.
Subbase	The layer(s) of specified or selected material of designated thickness in a pavement structure immediately above the subgrade and below the base course.
Surface Course	The top layer of the pavement structure designed to accommodate the traffic load and to resist skidding, traffic abrasion, and the disintegrating effects of climate; sometimes called the "wearing course."
"T" Cut	The removal of an asphalt overlay on a rigid base from the edges of a cut for a specified distance (see Standard Plan nos. 404a and 404b).
Unimproved Street Right-of-way	The street right-of-way that has not been improved for pedestrian or vehicular travel.
Wearing Course	See "Surface Course".

3.0 GENERAL PROVISIONS:

3.1 Responsibility for and cost of restoration: anyone making an opening in the street right-of-way under a permit or any other authority is responsible for permanently restoring the street right-of-way in accordance with the City of Seattle Standard Specifications and Plans, and this Rule. The permittee or contractor shall absorb all costs or reimburse SDOT for costs incurred resulting from maintenance or restoration of street openings, except where SDOT chooses to enlarge the area to be restored at its own expense pursuant to Section 3.19. When SDOT restores the street right-of-way, SDOT is liable for the performance of the restoration (see Sec. 3.20).

3.2 Environmental Best Management Practices: The permittee or contractor shall employ environmental best practices, as detailed in the Regional Road Maintenance Endangered Species Act (ESA) Program Guidelines (see Section 1.7). The permittee or contractor shall control surface runoff, erosion and sediment at the construction site, as required by the Seattle Municipal Code (SMC 22.800 through 22.802) and the Standard Specifications, Sections 1-07.5 and 1-07.15. The site and the surrounding area shall generally be kept clean and free of construction debris or other material, such as mud, dust, rock, asphalt and concrete etc. Waste materials shall be collected and disposed of at an appropriate disposal site. These materials shall be prevented from entering any part of the public sewer and storm drain system, and any surface waters. (See joint Director's Rule, DCLU Rule 6-93 and Seattle Transportation Rule 93-2, for additional information).

3.3 Three-year moratorium: Opening new pavement shall not be permitted within the three-year period following its installation, except in the following circumstances: emergency repairs that could not have been anticipated or that are necessary for the protection of the public's health and safety; new or revised service connections that have been requested by a utility customer; work for which SDOT's denial of a permit would violate federal law; or with prior approval of the SDOT Director.

3.4 Holiday season restrictions: No work is allowed in the following areas from Thanksgiving Day through January 1, except under special conditions authorized by the SDOT Director or except emergencies that pose immediate threat of property damage, personal injury or loss:

> **Central Retail Shopping District:** Area bounded on the south by Seneca Street, northeast by Denny Way, east by the I-5 Freeway, north by Virginia Street and on the west by First Avenue.
> **Pioneer Square District:** Area bounded on the north by Columbia Street, east by Second Avenue and Second Avenue South, south by South King Street and on the west by Elliott Bay.

3.5 Marking pavements for opening: Pavement removal street markings made in public places shall be identified by a painted triangle, inside of which shall be placed four (4) inch letters. White shall be used for marking proposed openings; the cuts shall be marked prior to contacting One Call, 1-800-424-5555. Identification letters shall be placed adjacent to the street opening or on the face of the nearest curb, in line with the cut. Special care shall be taken when marking decorative streets and sidewalks.

3.6 Timeframe for restoring openings: The permittee or contractor shall make every effort to restore the street opening as soon as possible and within the one-year period stipulated in SMC 15.32.160. When prompt restoration is not feasible, the permittee or contractor shall make known when applying for the permit, the timing of making permanent restoration and the intended use and plans for temporary or interim restoration (see Section 5.0), as applicable.

3.7 Coordination and notification: Public and private entities with facilities in Seattle's street right-of-way have rights as to protections, clearances and coordination/notification (reference Standard Specifications, Sections 1-07.16, 1-07.17, and 1-07.28). The permittee or contractor shall coordinate the work with other projects in the area in a manner that assures public safety and seeks to minimize disruption to the public, as required by the Standard Specifications, Section 1-07.28. Moreover, the permittee or contractor shall plan, schedule and implement the work in such a manner that allows the necessary and stipulated (see below) time for notification of others that may be impacted by the project.

The permittee or contractor shall call the One Call Utilities Underground Location Center 1-800-424-5555 not less than two (2) or more than ten (10) business days before the

scheduled start of any excavation that might affect underground utilities. In addition, the permittee or contractor shall take notice of and abide by the following:

3.7.1 Work that partially or completely restricts any arterial street, sidewalk or alley: An approved traffic control plan is required. The permittee or contractor shall provide SDOT's Street Use Division with at least 24-hours' advance notice before the start of work in the street right-of-way and then contact SDOT immediately upon completion. Arterial closure requires 72-hours' advance notice. In addition, it may be necessary to make the following notifications (See Standard Specification 1-07.28). The following telephone numbers may be useful for these notifications and for developing or implementing traffic control plans:

SDOT Traffic Control and Parking: 206-684-7623
SDOT Parking Meters: 206-5086 (to request meter hoods, 48 hours advance notice), 206-684-5370 (to request hood removal)
Seattle Fire Department: 206-386-1494 or 206-386-1495
Seattle Police Department: 206-684-5101 FAX (written notice)

3.7.2 Disruptions to Metro, Sound Transit and Monorail:

3.7.2.1 Metro: provide 48-hours' advance notice to Metro Construction Information Center, 206-684-2732. Metro requires five (5) business days' notice when it is necessary to relocate a bus stop, and fifteen (15) business days' for relocating a bus shelter. Contact 206-684-1910 when planned work is within ten (10) feet of Metro's overhead trolley wires; provide ten (10) days' advance notice when it may be necessary to move or de-energize wires. Metro cannot replace electric trolleys with diesel buses except on some weekends. This requires advance notice to King County Metro by no less than 10 A.M. on the Tuesday before.

3.7.2.2 Monorail (Seattle Center Monorail): Contact Seattle Monorail Services five (5) days in advance when work is within ten (10) feet of a Monorail Structure or twenty (20) feet of a foundation or below ground installation. 206-448-2258.

3.7.2.3 Seattle Monorail Project (Seattle Popular Monorail Authority): The Seattle Popular Monorail Authority plans to construct a monorail from NW 85th St and 15th Ave. NW in Ballard to SW Fauntleroy Ave. and California Ave. SW in West Seattle. The monorail will be under construction from 2005 through 2009 and possibly beyond. More information about the Seattle Monorail Project and points of contact for coordination may be found on the Internet at http://www.elevated.org/ or by calling 206-382-1220. When work is within 20 feet of any portion of monorail facilities (guideways, columns, stations and other structures), the permittee or contractor shall contact 206-262-5000 or email Notification@elevated.org at least 21 calendar days in advance of construction.

3.7.2.4 Sound Transit: Sound Transit's 24-hour construction hotline telephone listing is 888-298-2395.
3.7.2.5 Railroads: Railroads operate under franchise agreements with the City of Seattle. The railroads have exclusive maintenance jurisdiction within seven and a half (7½) feet of the centerline of their tracks and safety jurisdiction over an envelope that extends out twenty-five (25) feet from the centerline of the track. The railroads may require advance notification and operational coordination within this safety envelope. Operational coordination may include arranging for railroad flaggers with the total cost to be borne by the permittee, contractor or city crew. Three (3) days' advance notice is necessary when railroad flaggers are needed. Points of contact for the railroads are:

Ballard Terminal Railroad: 206-782-1447
Burlington Northern/Santa Fe: 206-625-6462
Union Pacific: 206-764-1468

3.7.3 Water mains and hydrants: Seattle Public Utilities requests five (5) days' notice before any request to shut down or otherwise interrupt water operations. Contact Water Operations Engineering, 206-386-1800.

3.7.4 Sanitary sewers: In the event of a spill or if necessary, contact:

King County Metro: 206-386-1801
SPU Drainage and Wastewater Division: 206-386-1800

3.7.5 Street trees and landscaped areas: Contact SDOT Urban Forestry, 206-615-0957 when proposed work may affect trees or landscaped areas in the street right-of-way. See also Section 8.1.4.

3.7.6 Electrical safety: Contact Seattle City Light, 206-684-4911 at least seven (7) days in advance when it is necessary to work on or around any of their facilities. When electrical facilities have been marked by One Call in the area of the proposed excavation, the permittee or contractor shall notify Seattle City Light at least three (3) working days in advance of excavation. Contact 206-615-0600 (North of Denny Way) or 206-386-4200 (South of Denny Way).

3.7.7 Communications utilities: When an excavation is to disrupt a communications utility system, the permittee or contractor shall provide at least ten (10) working days' notice for coordination. The permittee or contractor is responsible for directly contacting the affected communications utility.

3.7.8 Other underground utilities: Where an excavation may disrupt any other underground utility system, the permittee or contractor shall provide at least ten (10) working days' notice to the utility.

3.7.9 Signal loop detection systems: Where an excavation is to disrupt a signal loop detector system, the permittee or contractor shall provide at least ten (10) working days notice for coordinating loop disconnect and temporary signal timing. Call SDOT Traffic Operations 206-386-1206.

3.7.10 Survey monuments: Survey monumentation exists within Seattle's street right-of-way. RCW Chapter 58.09 requires that survey monuments be protected and RCW Chapter 332.120 specifies procedures for protecting monuments. Before work begins near to or including a survey monument or monument casing, the permittee or contractor shall comply with Standard Specifications, Section 1-07.16(1) and 1-07.28(16). Contact Seattle Public Utilities' Survey Office at 206-684-5073 or 206-684-4674 at least four (4) days in advance of the proposed work for more information and instructions.

3.7.11 Historic Landmark Districts: Before any work can be done in a Historic Landmark District, the Historic Preservation Officer must be notified, and review and approval by a district board or the Director of Neighborhoods for changes to streets, sidewalks and curbs may be required. Historic landmark districts include:

- Ballard Avenue
- Columbia City
- Fort Lawton
- Harvard-Belmont on Capitol Hill
- International District
- Pike Place Market
- Pioneer Square

Maps showing the historic district boundaries are on-line at http://www.cityofseattle.net/neighborhoods/preservation/ . Emergency work is exempt from this requirement, but in no case shall permanent pavement restoration be done without such notification, and any required approval. Contact Seattle's Historic Preservation Officer, 206-684-0381.

3.7.12 Work next to SDOT structures: Work on or within twenty-five (25) feet of any SDOT structure such as a bridge, bridge approach embankment, support wall, curb wall, retaining wall, rockery or stairway shall be reviewed for approval by the Roadway Structures Section of SDOT prior to the start of any excavation or removal. Call 206-684-5301.

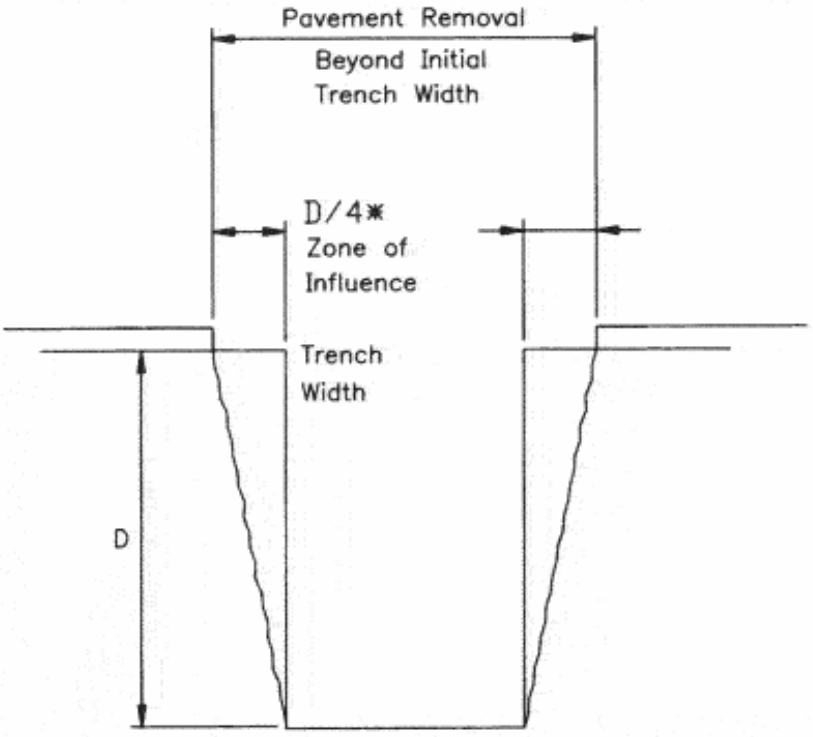
3.7.13 Pervious (porous) pavements: Certain street segments may be designed and constructed as pervious pavements. As of the date of this Rule, the only block of pervious pavement that has been designed is 32nd Ave SW between SW Juneau St and SW Raymond St; however, other blocks of pervious pavement may be constructed in the future. Pervious pavements are to be restored to their original design and specifications, to the extent practicable. Restoration plans

shall be reviewed for approval by SPU Engineering Services, (206) 684-5950, prior to the start of any excavation or removal.

3.8 Zone of Influence: Openings in the pavement, and the activities associated with construction in the opening may contribute to loss of foundation support for the pavement structure surrounding the opening. In general, the types and relative densities of surrounding soils and backfills, the influence of groundwater and associated dewatering activities, the impacts of construction methods and systems, and other influences may contribute to a loss, or potential for future loss, of pavement foundation support. Experience in Seattle has shown that in general, a horizontal distance of 25 percent of the depth of the opening extending out from the edge of the opening (see Figure 2) is a reasonable predictive limit in most instances to the loss of pavement foundation support. However, in some soil conditions the "zone of influence" can extend a horizontal distance greater than 25 percent of the depth of the opening. Restorations in general shall extend to include the zone of influence.

FIGURE 2

The zone of influence is dependent on soil type and construction method. The amount of pavement removal that may be required to allow for adequate re-compaction of the soil adjoining the excavation is based on the estimate of soil movement resulting from the installation of the utility.



* Zone of influence is dependent on the type and condition of the adjacent soils.

3.9 Restoring and adjusting castings and survey monuments: The permittee or contractor shall adjust castings in accordance with Standard Specifications, Section 7-20 at no cost to the city. Castings, such as drainage inlets, maintenance holes, valve chambers, and meter boxes shall be adjusted to finish grade prior to construction of the final surface course (See Standard Specifications, Section 5-04.3(9)B). Any casting or lid that is worn or broken shall be replaced prior to the installation of the final surface. Before any construction begins that may or will disturb a monument or monument casting, the permittee or contractor shall comply with the requirements of Standard Specifications, Sections 1-07.16 and 1-07.28, item 16. See also Section 3.7.10.

3.10 Restoring signal loops, pavement markings, and other traffic operations appurtenances: If the excavation damages or removes any traffic operations features, then the permittee or contractor is responsible for costs associated with restoring those features. Signal, sign and marking restorations will ordinarily be undertaken by SDOT. When SDOT restores the features, then the full cost of the traffic operation restoration is to be included in the cost of the utility cut restoration, and will be billed to the permittee or contractor. The Standard Specifications Sections for traffic operations appurtenances are 8-08, 8-10, 8-21, 8-22, 8-30, 8-31, 8-32, and 8-33.

3.11 Auger holes: Holes in pavement up to eight (8) inches in diameter that are drilled with an auger and then filled and sealed by the permittee or contractor are exempted from the restoration area requirements of this Rule except for the following requirements: auger holes shall be spaced at least fifteen (15) feet apart; and, no more than two auger holes shall be drilled into a single concrete panel. Auger holes shall be filled with an approved controlled density fill (CDF) mixture to the top of the subgrade and the pavement structure shall be restored in kind. Exceptions require the permission of SDOT.

3.12 Underground construction: SDOT may require the permittee or contractor to consider underground construction methods where difficulties are indicated in the removal and restoration of special or decorative surface features, in areas of historic significance, in areas of heavy traffic, or for other reasons. The permittee or contractor may be required to obtain the services of a geotechnical engineer with expertise in underground construction methods.

3.13 Public protection: The permittee or contractor may need to prepare a traffic control plan in compliance with the City of Seattle Traffic Control Manual for In-Street Work (also see Standard Specifications, Section 1-10) and may need to obtain street or lane closure restrictions (see Standard Specifications, Section 1-10.2(5)C). Public convenience and safety shall comply with Standard Specifications, Section 1-07.23.

3.14 Quality of construction: All work in the right-of-way shall be performed with diligence in a timely manner and conform to applicable Standard Specifications, Standard Plans, permit conditions and any special provisions approved by the SDOT Director.

3.15 Alternate methods: SDOT encourages innovative techniques and new technologies in the removal and restoration of street and sidewalk pavements. To that end, SDOT may, on a case-by-case basis, waive certain specific requirements of this Rule, when such action would effectively advance a new technology and/or state of knowledge. The burden of testing or otherwise demonstrating that a new technique is likely to be effective rests with the permittee or contractor. The permittee or contractor shall provide adequate documentation in advance that the alternate method shall produce results equal to or better than those resulting from this Rule and the relevant Standard Specifications and Plans, and that any adverse impacts to others' facilities will not occur.

3.16 Testing: SDOT may require materials testing, compaction testing, or other testing deemed necessary to assure that street restoration is performed in accordance with City of Seattle Standard Specifications and Plans. Testing shall be conducted by a testing organization acceptable to the SDOT Director and shall be conducted at the expense of the permittee or contractor. On large projects, SDOT may require non-destructive testing of pavements prior to removal, as a means of determining the extent of needed restoration.

3.17 Approval of materials: All materials used shall comply with the Standard Specifications. SDOT may require the permittee or contractor to provide a manufacturer's certificate of compliance for each material (see Standard Specifications, Section 1-06.3), may require the permittee or contractor to provide the source of supply for each material (see Standard Specifications, Section 1-06.1), and may require the permittee or contractor to obtain the services of an independent testing laboratory certified by AASHTO and ACI to test and provide certified test reports.

3.18 Cleanup, incidental and collateral damage: The street right-of-way, material storage sites, construction staging areas, and all other areas affected by the work shall be left neat and presentable, and shall be fully restored as necessary in accordance with this Rule, and as required by Standard Specifications, Sections 1-04.11 and 1-07.13. Costs associated with site cleanup and restoration are integral to the project. If SDOT incurs additional cleanup costs, these costs may be billed to the permittee or contractor. Moreover, except as provided in Revised Code of Washington (RCW) 19.122.030, *any damage or destruction to existing public or private facilities done during the course of work shall be restored at the permittee or contractor's expense.* This includes restoration of all traffic devices and pavement markings. The SDOT Director shall determine the extent of damage and shall order the extent and type of restoration, except as provided in RCW 19.122.030.

3.19 Additional work: If a utility wishes to upgrade its facilities (e.g. provide additional capacity) while a permittee or contractor has the street open and before the pavement is restored, then the difference in cost between replacing the utility's facility and upgrading it will be at the utility's expense. In some cases when SDOT restores the street surface, SDOT may elect to remove and replace pavement beyond the limits required by these

rules. When this is done, this discretionary removal and replacement will be separately identified on all documents and will not be charged to the permittee or contractor.

3.20 Liability for damages and for maintaining a street restoration: The permittee or contractor is liable for incidental damages caused by construction, whether or not those damages have been discovered at the time of construction. When SDOT performs the restoration, the permittee or contractor remains liable for damages associated with their construction, but is no longer liable for maintaining the restoration. When the permittee or contractor performs the restoration, then the permittee or contractor remains liable for maintaining the restoration until such time as the street segment is reconstructed.

3.21 Waivers to the restoration requirements: SDOT may grant exceptions to the restoration requirements on a case-by-case basis. Proposed exceptions shall be reviewed by appropriate SDOT engineering staff for technical sufficiency. Following review, the Street Use Inspector shall document the request for exception, the review of the exception and the granting of the exception in writing.

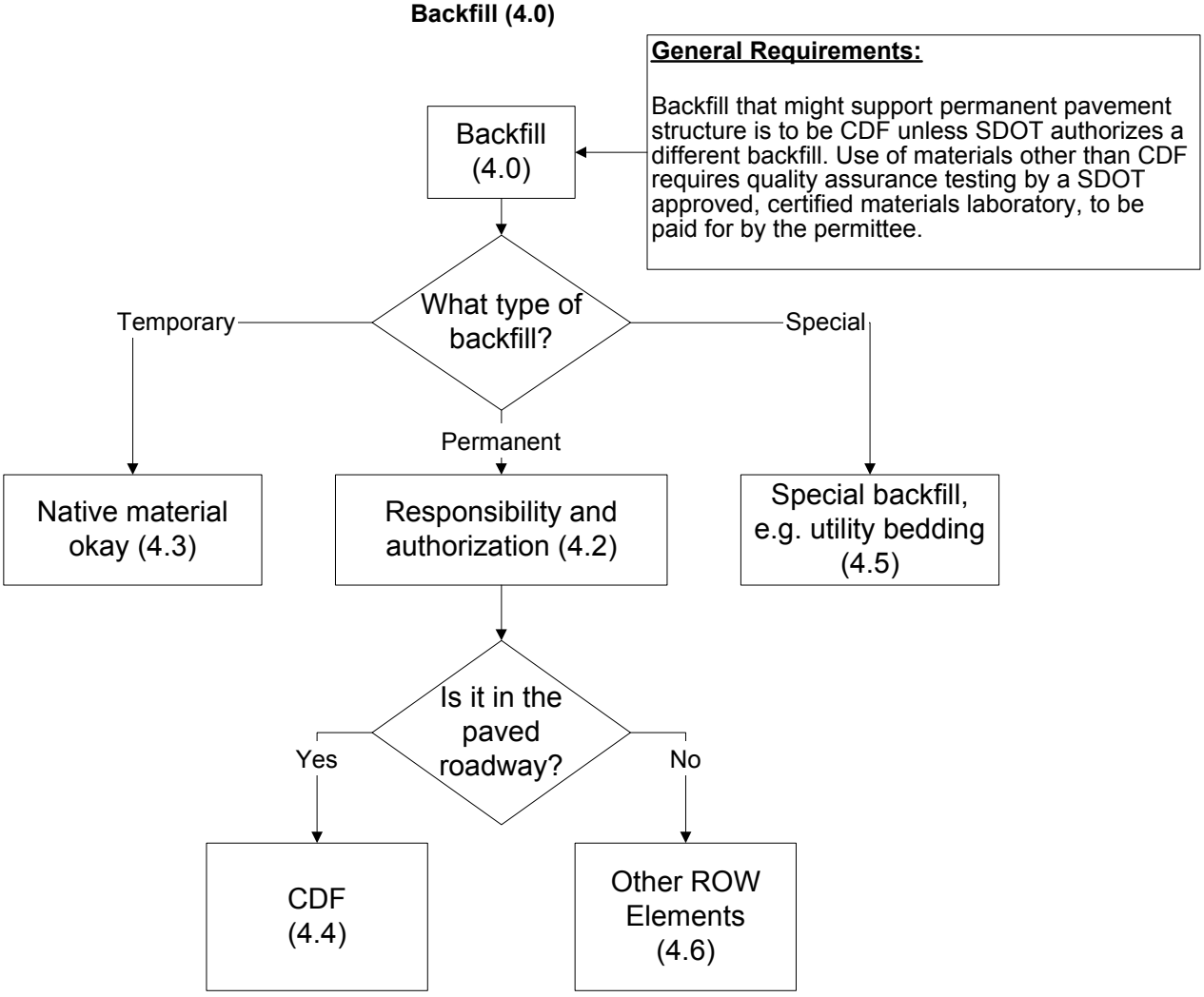
4.0 BACKFILLING EXCAVATIONS IN THE STREET RIGHT-OF-WAY

4.1 General: A summary of this section appears in Figure 3. Excavations in the street right-of-way shall be backfilled in accordance with Standard Specifications, Sections 7-10.3(7), 7-10.3(10), 7-10.3(11), 7-17.3(1)A, 7-17.3(3), 8-33.3(1) and 9-01.5.

The backfill must be appropriate for its intended use, and the prevailing soil and groundwater conditions, and must be capable of supporting pavement structure. Subsurface utilities may have special bedding or foundation needs. Backfill material that supports or might support pavement structure within the street right-of-way shall be controlled density fill (CDF), unless SDOT engineering staff authorize the use of a different backfill material. ***Use of materials other than CDF will require quality assurance testing by a SDOT approved, certified materials laboratory, to be paid for by the permittee.***

FIGURE 3

Street and Sidewalk Pavement Opening and Restoration Rules (PORR)



4.2 Responsibility for backfills: In general, permittees or contractors may do their own backfills provided that prior permission has been obtained from SDOT. When the permittee or contractor does the backfill, then the permittee or contractor is responsible for the performance of the backfill until the street is reconstructed. When SDOT backfills the opening at the permittee or contractor's expense, then SDOT is responsible for the performance of the backfill.

4.2.1 Contractor or permittee authorization to undertake backfills: Backfills placed by SDOT will be billed to the permittee or contractor. Contractors or permittees are authorized to undertake their own backfills under the exceptions below.

4.2.1.1 Excavation size: Excavations of eighteen (18) square feet or less and not exceeding six (6) feet in depth.
4.2.1.2 Crushed rock, gravel, dirt or oil mat surfaces: Excavations made in crushed rock, gravel, dirt or oil mat surfaced roadways.
4.2.1.3 Walkways, roadway shoulders and planting strips: Excavations made in concrete, asphalt or gravel walkways; roadway shoulders; or planting strips.
4.2.1.4 SDOT inspection: Work performed under full-time SDOT inspection and authorized and identified on the Street Use permit.
4.2.1.5 City of Seattle public works contracts: Work performed under City public works contracts.
4.2.1.6 Contract bond or permit conditions: Private street improvements where the private construction is covered by a contract bond or where the responsibility for backfill is specifically addressed in the Street Use permit.

4.2.2 Emergencies: When an emergency arises and it is necessary to backfill an excavation, the permittee or contractor must make every reasonable effort to obtain authorization from SDOT before undertaking the backfill. When the permittee or contractor without SDOT authorization or inspection performs backfill, the permittee or contractor shall comply with Section 4.3.

4.3 Temporary backfills: Street excavations made without SDOT inspection shall be temporarily backfilled and patched by the contractor or permittee. The backfill shall be guaranteed by the permittee or contractor to provide acceptable foundation support until such time as a permanent restoration is made.

4.3.1 Responsibility for maintenance: Should settlement or other failure of a surface patch occur, the permittee or contractor shall quickly correct the defect. If the permittee or contractor cannot quickly be notified or cannot make the restoration in a timely way, then SDOT may make the necessary restoration. Restorations made by SDOT will be billed to the permittee or contractor at established (published) rates.

4.3.2 Temporary street opening requirements: When required for reopening the road or for any other reasons, the permittee or contractor shall place a temporary surface appropriate to the traffic and loading conditions (see Section 5.0). The permittee or contractor is responsible for maintaining the temporary backfill and surface until the opening is permanently restored.

4.4 Backfilling with Controlled Density Fill (CDF): CDF shall meet the requirements of Standard Specifications Section 9-01.5. CDF may be placed by any reasonable means from a mixing unit into the space to be filled. CDF placement into closed spaces may require the installation of vent holes. Agitation is required during transportation and waiting time. Placement shall be performed in such a manner that structures or pipe are not displaced from their desired final position, other underground alignments and grades

encountered in the excavation are not dislocated, and intrusion of CDF into undesirable areas is avoided. CDF is a heavy fluid material and during placement will exert high fluid pressures against any form, embankment or wall. Placing CDF in multiple lifts may be required to control movement or shifting and prevent floating of pipes or vaults. Each placement of CDF shall be as continuous an operation as possible. If CDF is placed in more than one lift, the base lift shall be free of surface water and loose or foreign material prior to placement of the next lift. When backfilling a linear excavation feature with CDF, care must be taken to allow for groundwater migration across the feature. CDF must be allowed cure before it can support materials placed above it.

4.5 Special backfill materials and circumstances: Use of special bedding, foundation or backfill materials may be authorized or requested and will be approved under the conditions below.

4.5.1 SDOT structures: Backfills within twenty-five (25) feet of SDOT structures such as retaining walls, bulkheads, bridge approach embankments, or bridge footings shall be performed by SDOT unless otherwise authorized by the SDOT Roadway Structures Section.

4.5.2 Thermally conductive material: Thermally conductive material may be required on a site-specific basis. Seattle City Light Standard 7150.0 Fluidized Thermal Backfill (FTB) is specifically authorized as bedding material for subsurface electrical systems.

4.5.3 Groundwater: In areas of flowing groundwater, free-draining material or clay dams may be required due to slopes, soil or water table conditions.

4.5.4 Steam lines: CDF shall not be used within ten (10) feet of a steam line.

4.5.5 Water mains: Bedding materials for water mains may have to meet special state health requirements.

4.5.6 Native material: Native material may be approved for backfill on large projects if it is (a) capable of attaining 95% compaction where the subgrade supports pavement, (b) within reasonable tolerance of optimum moisture content, (c) reasonably free of organic material, clay, lumps, rocks or pavement chunks more than six inches in diameter, and (d) is free of other deleterious or potentially hazardous matter. In some areas, for example under flexible pavements that cross over peaty soils, native backfill may be necessary in order to match the behavior of the surrounding soils so that the flexible pavement experiences equivalent consolidation and settlement.

4.5.7 Other materials: Other suitable materials may be required or approved on a site-specific basis as specified in Standard Specifications, Sections 2-03 and 2-09.

When backfill materials other than CDF are used to support pavement structure, they are to be placed in accordance with the Standard Specifications.

4.6 Backfilling in areas of the street right-of-way outside the paved roadway: The guidelines below apply to backfill in the right-of-way, but outside the paved roadway.

4.6.1 Unsurfaced road shoulders: Openings made in unsurfaced road shoulders shall be finished with a Subbase of four (4) inches of Mineral Aggregate Type 2 and then a finished or top surface of two (2) inches of Mineral Aggregate Type 1.

4.6.2 Pedestrian and bicycle use areas: Openings made in pedestrian and bicycle use areas (including concrete walks, asphalt pathways and bikeways) shall be backfilled with the same methods and requirements as roadways.

4.6.3 Drainage systems: Openings made in ditches, channels and natural drainage systems shall be filled and replaced in kind.

4.6.4 Unimproved or vegetated areas: Openings made in unimproved or vegetated areas of the street right-of-way (such as planting strips) may be backfilled with suitable native material with prior approval from the Inspector or Engineer. The excavations should be topped off with materials that match the existing and surrounding materials and material thicknesses (e.g., topsoil, mulch, etc.)

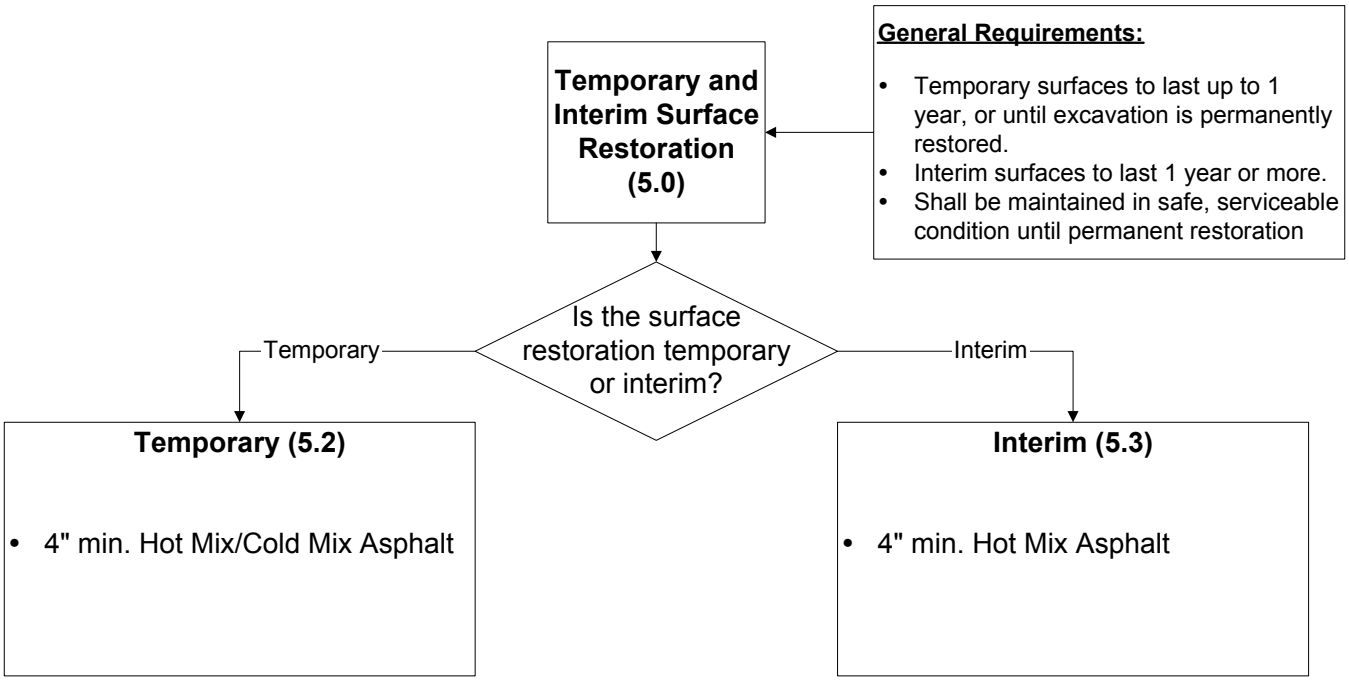
5.0 TEMPORARY AND INTERIM SURFACE RESTORATIONS

5.1 General: A summary of this section appears in Figure 4. A temporary surface is normally necessary after an excavation has been backfilled and before the surface is permanently restored, and is mandatory in vehicular and pedestrian traffic areas unless the street right-of-way is restored permanently immediately following the excavation. Temporary restorations shall be permanently restored within one year (SMC 15.32.160). An interim surface is a more durable surface than a temporary surface. SDOT may occasionally require that an interim surface be installed, especially on large projects in heavily trafficked areas where the interim surface may have to last for a year or more. Temporary or interim surfaces shall perform acceptably and be maintained in safe, serviceable condition until the surface is permanently restored.

The permittee or contractor shall make every effort to permanently restore pavement openings in a timely way. When permanent restoration must be delayed, the permittee or contractor shall make this known to SDOT and shall include the proposed timing and plans for temporary, interim or permanent restoration at the time of application for the permit (see Sections 1.3 and 3.6).

FIGURE 4

Street and Sidewalk Pavement Opening and Restoration Rules (PORR)
Temporary/Interim Surface Restoration (5.0)



5.2 Temporary surfaces: When the street surface is to be temporarily restored, the permittee or contractor shall place and maintain over the backfilled excavation a 4-inch minimum compacted thickness cold mix asphalt or hot-mix asphalt patch. The asphalt patch shall be tamped and leveled to meet adjacent surfaces. Cold-mix asphalt products made from recycled products such as E-Z Patch or US Cold Mix are environmentally preferable to MC250, which contains a higher fraction of diesel or kerosene.

5.3 Interim surfaces: A 4-inch minimum compacted thickness of hot mix asphalt is required for interim surfaces. When an interim surface is to remain in place for a year or more on an arterial, bus route, or non-arterial industrial/commercial street, SDOT may require that a pavement design be submitted for approval. The asphalt surface is to be constructed in accordance with Section 5-04 of the Standard Specifications.

5.4 Protection of openings: When an opening in the right-of-way cannot be restored by the end of the work day; a combination of traffic control devices, street saddles and/or steel plates shall be used to protect the opening. These measures shall provide for public safety and conform to the requirements of all applicable standards, including the Standard Specifications, Sections 1-07.1, 1-07.23, 2-02.3(8) and the City of Seattle Traffic Control Manual for In-Street Work. The permittee or contractor shall protect the opening until temporary or permanent restoration is completed.

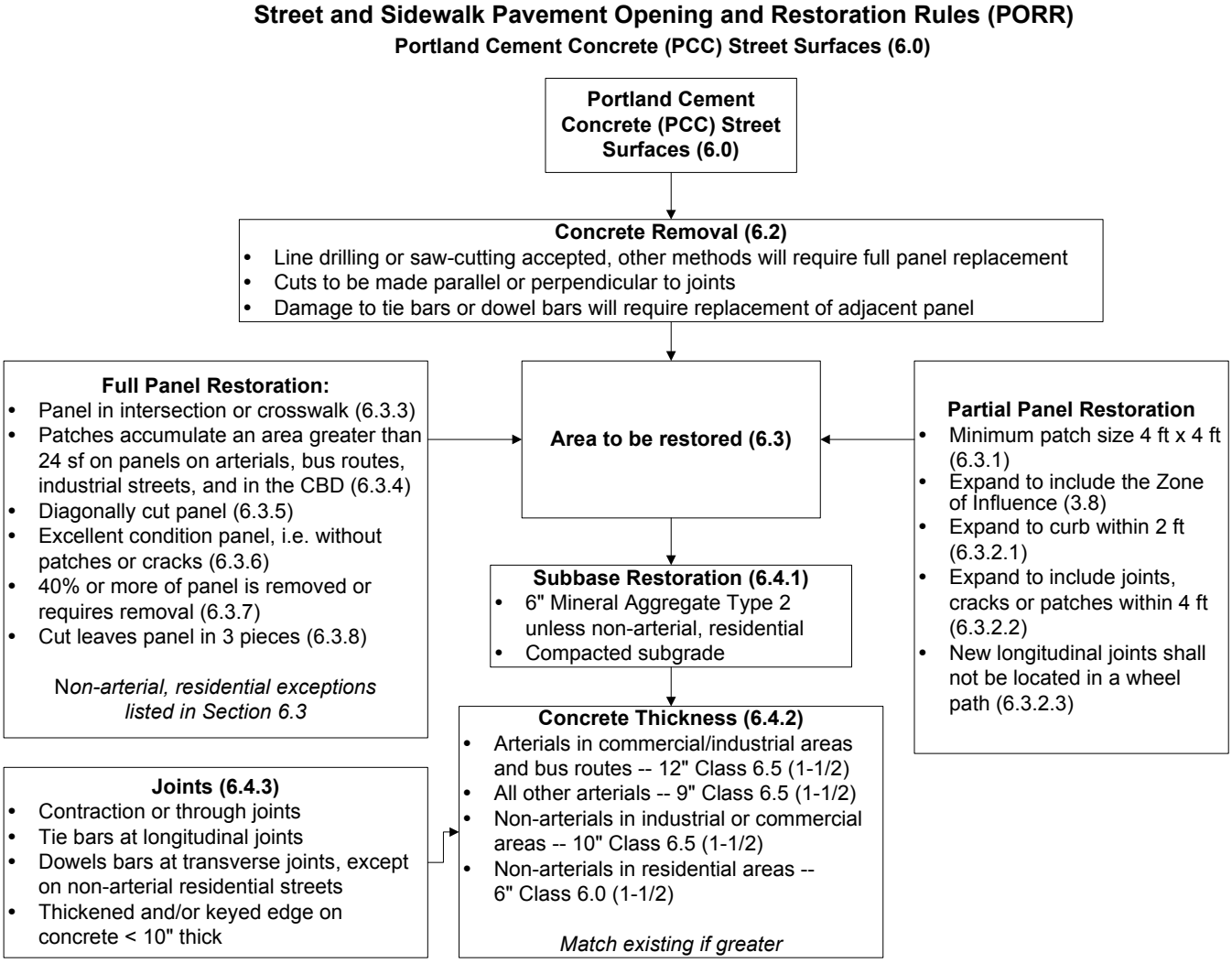
5.4.1 Use of permittee's or contractor's opening protection: All appropriate devices required to protect openings in the public right-of-way shall be maintained by the permittee or contractor until the temporary or permanent restoration is completed. The permittee or contractor shall remove the devices within 24 hours of notification from SDOT. The use and removal of the devices will be at no cost to the City.

5.5 Maintenance of temporary and interim surfaces: The permittee or contractor is responsible for maintaining temporary and interim surfaces until the surface has been permanently restored. Temporary and interim surfaces are to be maintained flush with the adjacent pavement, at grade, and in good condition. Timely correction of settlement of the backfill beneath the temporary or interim surface is the responsibility of the permittee or contractor. Should settlement or other failure of a temporary or interim surface occur, the permittee or contractor shall quickly correct the defect. If the permittee or contractor cannot quickly be notified or cannot or does not maintain the restoration in a timely way, then SDOT may undertake the necessary restoration. Restorations made by SDOT will be billed to the permittee or contractor at established (published) rates.

6.0 RESTORING PORTLAND CEMENT CONCRETE (PCC) STREET SURFACES

6.1 General: A summary of this section appears in Figure 5. Portland cement concrete street surfaces are to be restored in accordance with Standard Specifications, Sections 2-02.3(3) (Removal), 5-05 (Cement Concrete Pavement/Rigid Base), and Standard Plan Nos. 400-411.

FIGURE 5



6.2 Portland Cement Concrete Pavement Removal: Pavement removal shall follow the guidelines below. Damage to existing facilities or pavement that is to remain in place shall be repaired at the permittee or contractor's expense (Section 3.18).

6.2.1 Removal Methods: Cuts in the pavement surface are to be made by saw cutting or line drilling (see Standard Specifications, Section 2-02.3(6)). Whenever a panel is broken out without these techniques, then it shall be replaced in its entirety. Should the removal cause excessive spalling or cracking, then SDOT will require that the entire panel be replaced. Saw cutting is not required when an entire panel is to be removed. Prior to restoration all cut edges shall be trued so that the exposed faces are plumb and straight.

6.2.1.1 Saw cutting. The minimum depth of any saw cut shall be such that one-half the thickness of the concrete panel is cut. The maximum

depth saw cut shall be such that no more than three-fourths the thickness of the concrete panel is cut. Cutting wheel run-out beyond the limit of the opening shall be minimized and patched with mortar or grout as needed. The slurry resulting from the cutting operation shall be contained, collected and disposed of in an environmentally responsible manner. No slurry, concrete cuttings or other waste material shall be allowed to enter any storm, sanitary or combined sewer system.

6.2.1.2 Line drilling. Line drilling holes shall be 1-1/2 inches in diameter and the maximum spacing between holes shall be six inches, center to center. The holes shall be perpendicular to the panel and extend completely through the pavement.

6.2.2 Protection of tie bars and load transfer dowels: During the removal of concrete panels, precautions must be taken to avoid damage to load transfer dowel bars, tie bars and concrete above and below the bars on adjoining panels. Damage to an adjoining panel will require its replacement.

6.2.3 Direction of cuts. To the maximum extent practicable, cuts shall be made parallel and/or perpendicular to longitudinal and transverse joints.

6.3 Area to be restored: Additional pavement replacement beyond the cut will be required under the conditions outlined below. In all cases, the cut shall be expanded to include the Zone of Influence requirement (Section 3.8). See Appendix B for concrete pavement restoration examples.

6.3.1 Minimum size restoration: The required minimum size restoration is four (4) feet in both the longitudinal and transverse directions.

6.3.2 Cut expansion: Where partial panel replacement is allowed, the cut shall be expanded to the limits below.

6.3.2.1 Curbs. If the edge of the cut is less than two (2) feet from the face of a curb, then the intervening portion of the panel and also the curb shall be removed and replaced.

6.3.2.2 Joints, panel edges, patches or cracks. Cuts shall be expanded to include joints, panel edges, existing patches or cracks within four (4) feet of the opening.

6.3.2.3 Wheel paths. Cuts shall be expanded to ensure new longitudinal joints are not located in a wheel path.

6.3.3 Intersections and crosswalks: Full panel restoration is required on panels within the area of an intersection or in a marked crosswalk. See Section 8.6.8 for associated curb ramp restoration requirements.

6.3.4 Arterial cut size rule: Full panel restoration is required any time cuts accumulate an area of more than twenty-four (24) square feet in any panel on arterials, bus routes, industrial streets or on any street in the Central Business District.

6.3.5 Diagonal cuts: Full panel restoration is required any time a panel is cut diagonally.

6.3.6 Panels in excellent condition: Panels in excellent condition are to be completely removed and replaced. Panels in excellent condition are panels that are in one piece (i.e. without patches or cracks) prior to removal.

6.3.7 Forty (40%) percent rule: A Portland cement concrete street panel is to be replaced in its entirety whenever a cut removes (or requires removal of) more than forty percent (40%) of the panel. The replacement area shall determine the area calculation.

> **Exception*:** *On non-arterial, non-bus route, residential streets,* only the initial cut area may be counted toward the forty (40%) percent area calculation. See Appendix C.

6.3.8 Three (3) piece rule: When a cut and ensuing restoration would leave a panel in three or more parts, regardless of prior condition, the entire panel shall be removed and replaced. A patch shall count as one piece. See Appendix B.

> **Exception*:** *On non-arterial, non-bus route, residential streets,* panels may be restored so that the number of pieces in the restored panel is not greater than existed prior to making the cut. A patch shall count as one piece. The restoration area shall be extended to include existing cracks and patches as necessary. No remaining portion of the panel adjacent to the patch shall be smaller than the 4-foot minimum patch size. See Appendix C.
>
> Panels cracked in six (6) pieces or more with a crack width of (1) inch or greater may be patched in the area of the initial opening. The initial opening shall be expanded to include nearby cracks and small panel fragments so no material that might shift is left adjacent to the patch.

6.4 Pavement Thickness and Joint Details: SDOT may require a paving plan with joint layouts. SDOT will normally require this for projects that pass through an intersection or extend for a city block or more. The class of concrete for arterial, bus route and non-arterial industrial or commercial street pavement restoration is normally Class 6.5 (1-1/2).

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* The exception requires the permittee or contractor to identify the location of their opening and the Street Use Inspector to mark the restoration area prior to opening the pavement. If the restoration deviates from the marked extents, then this exception does not apply.

The class of concrete for non-arterial residential streets is normally Class 6.0 (1 1/2). High Early Strength concrete may be used to meet early opening requirements. Refer to Standard Specifications, Section 5-05 for concrete pavement details.

6.4.1 Subbase restoration: The surface restoration shall be placed over a minimum of six (6) inches of compacted crushed rock (Mineral Aggregate Type 2) over compacted subgrade, except in the case of non-arterial residential streets which may be placed directly on compacted subgrade.

6.4.2 Portland cement concrete (PCC) standard sections: The concrete thickness requirements by street type are:

6.4.2.1 Bus routes: twelve (12) inches or match existing if greater.
6.4.2.2 Arterial streets in commercial or industrial areas: twelve (12) inches or match existing if greater.
6.4.2.3 All other arterial streets: nine (9) inches or match existing if greater.
6.4.2.4 Nonarterial streets in industrial or commercial areas: ten (10) inches or match existing if greater.
6.4.2.5 Nonarterial residential streets six (6) inches or match existing if greater.

Restorations are to match existing grades at the above-specified depths. These values can be modified based on an SDOT-approved paving design using the 1993 AASHTO Guide for Design of Pavement Structures (AASHTO Pub. No. GDPS-4, available on-line at https://www.transportation.org/publications/bookstore.nsf). All pavement designs shall be reviewed for approval by SDOT Roadway Design Section staff.

6.4.3 Joint details:

6.4.3.1 Thickened edges: Thickened edges and/or keyed thickened edges at construction joints shall be constructed in full panel replacement of less than ten (10) inches in thickness. See Standard Specifications, Section 5-05.3(8)C2 and Standard Plan No. 405.
6.4.3.2 Joint types: Transverse and longitudinal joints shall be contraction or through joints. Insofar as possible, joints shall be placed parallel or at right angles to the centerline of the roadway, except for normal deviations necessary to accommodate manholes, vaults and other features in the street right-of-way; in general, joints shall approach these features at right angles. SDOT may require a pavement joint layout plan, as stated above. See Standard Specifications, Section 5-05.3(8) and Standard Plan No. 405.
6.4.3.3 Load transfer dowel bars and tie bars (see Standard Plan No. 405). Longitudinal joint tie bars shall be required at the joints of new concrete panels whenever two or more panels are replaced. Transverse joint load transfer dowel bars shall be required at the joints of new

concrete panels whenever two or more panels are replaced, except on non-arterial streets in residential areas. See Standard Specifications, Section 5-05.3(10) and Standard Plan No. 405.

6.5 Surface smoothness: The surface of the pavement shall meet the following tolerances when tested with a ten (10) foot straightedge (refer to Standard Specification 5-05.3(12)).

Arterial streets and bus routes: 1/8-inch variance in ten feet.
Non-arterial streets: 1/4-inch variance in ten feet.
Concrete bases and alleys: 3/8-inch variance in ten feet.
Concrete base for unit pavers: 1/8-inch in ten feet.

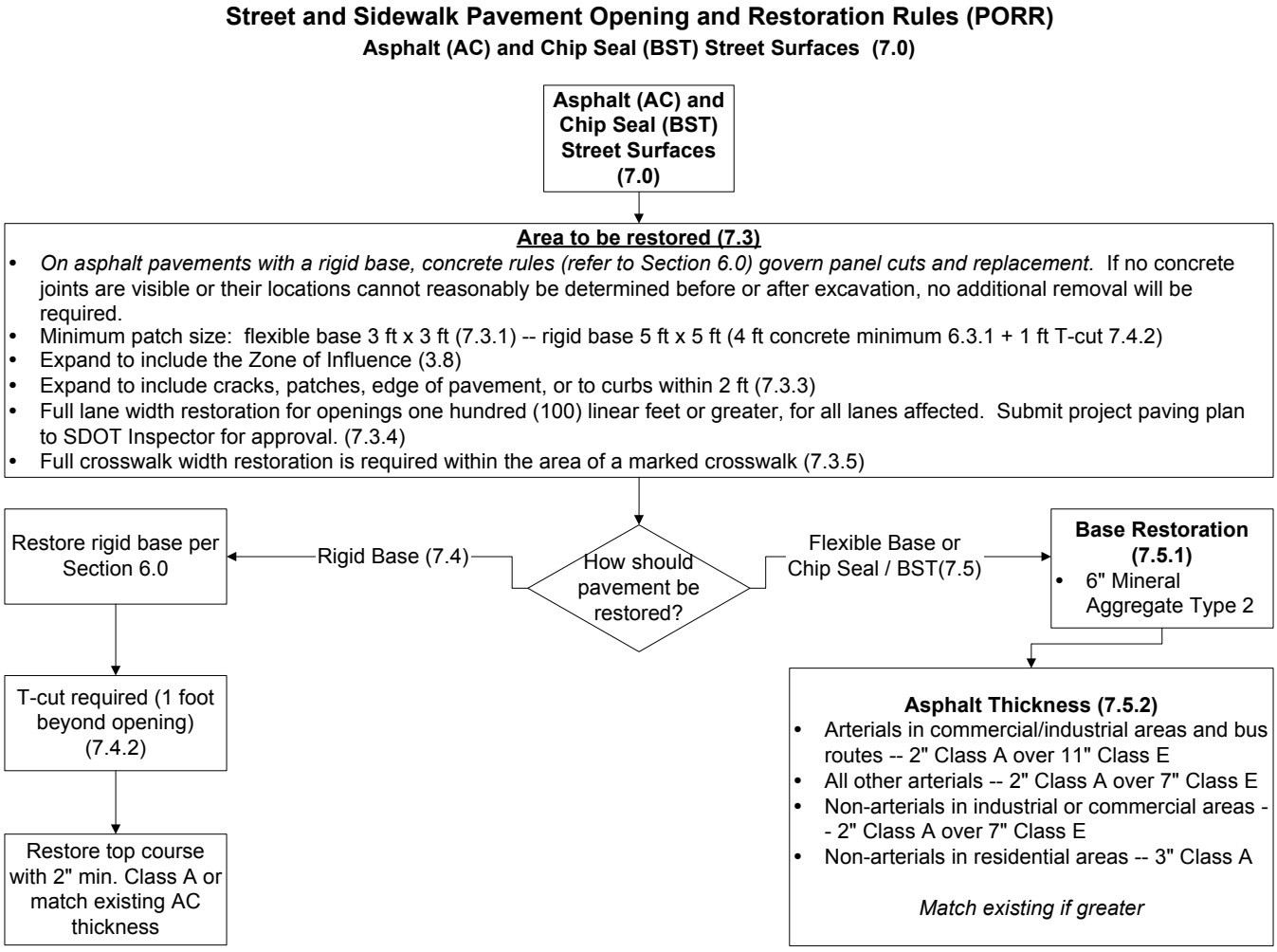
The grade and smoothness in the gutter shall be such that water does not pond. If the surface smoothness after curing exceeds the above tolerances, high spots shall be ground until the surface meets the tolerances in the Standard Specifications. If surface smoothness tolerances are not satisfactorily met or corrected, the pavement shall be removed and replaced (see Standard Specifications, Section 5-05.3(12) for additional requirements).

6.6 Color and finish. Pavement surface finish (Standard Specifications, Section 5-05.3(11)E) and color shall match the surrounding surface to the extent practicable.

7.0 RESTORING ASPHALT CONCRETE (AC) SURFACES INCLUDING BITUMINOUS SURFACE TREATMENT (BST) STREET SURFACES

7.1 General: A summary of this section appears in Figure 6. Asphalt concrete and BST street surfaces are to be restored in accordance with Standard Specifications, Sections 2-02.3(3) (Removal), 5-04 (Asphalt Concrete) and 5-05 (Cement Concrete Pavement/Rigid Base); and Standard Plan Nos. 401 (Sections 401C and 401D), 402 (Sections 402B and 402D), and 404 (Sections 404A and 404B).

FIGURE 6



7.2 Asphalt concrete pavement removal: Pavement removal shall follow the guidelines below. Damage to existing facilities or pavement that is to remain in place shall be repaired at the permittee or contractor's expense (Section 3.18).

7.2.1 Visible joints and cracks: *On asphalt pavements with a rigid base, Section 6.0 RESTORING PORTLAND CEMENT CONCRETE (PCC) STREET SURFACES shall govern panel cuts and replacement. If joints or cracks show through the surface on asphalt/rigid base pavements, the same rules apply as though the surface was concrete.* If no joints are visible or their locations cannot reasonably be determined before or after excavation, no additional removal will be required beyond the Zone of Influence requirement (Section 3.8).

7.2.2 Asphalt cutting wheels: When cutting asphalt, the cutter shall cut completely through the asphalt surface. Cuts shall be square with cuts parallel or

at right angle to the centerline of the roadway, except for cuts around castings and vaults.

7.3 Area to be restored: Additional pavement replacement beyond the cut will be required under the conditions outlined below. In all cases, the cut shall be expanded to include the Zone of Influence requirement (Section 3.8). See Appendix D for flexible base pavement restoration examples and Appendix B for rigid base pavement restoration.

7.3.1 Minimum size of restoration: On flexible base pavements, the required minimum size of an asphalt patch shall be three (3) feet in both the longitudinal and transverse directions. If the patch is at the edge of the pavement, the patch shall be expanded to a minimum of three (3) feet in width. *On rigid base pavements, the requirements of Section 6.0 RESTORING PORTLAND CEMENT CONCRETE (PCC) STREET SURFACES shall determine patch size.*

7.3.2 Preleveling: When a surface of the existing pavement or base is irregular, it shall be brought to a uniform grade and cross section by preleveling. Refer to Standard Specifications, Section 5-04.3(5)B2.

7.3.3 Cut expansion: Cuts shall be expanded to curbs, pavement edges, cracks and to include existing patches within two (2) feet of the opening. Cuts shall be expanded to ensure new longitudinal joints are not located in a wheel path.

7.3.4 Openings one hundred (100) feet or longer: The minimum restoration requirement for openings one hundred (100) linear feet or greater is full-lane-width restoration for all lanes affected. The permittee or contractor shall prepare a project paving plan for restoration when the opening length exceeds one hundred (100) linear feet. Such plan shall be submitted to SDOT for approval.

7.3.5 Marked crosswalks: Full crosswalk width restoration is required within the area of a marked crosswalk. See Section 8.6.8 for associated curb ramp restoration requirements.

7.3.6 Asphalt pavement less than three (3) years old: The minimum width of the replacement overlay shall be the full lane width on multiple lane roadways and to the centerline on two lane roads. The top of the base pavement shall be exposed a minimum of one (1) foot from all edges of the opening. The length of replacement shall be the longitudinal length of the cut plus one (1) foot at each end.

7.4 Restoring asphalt/rigid base pavements:

7.4.1 Base restoration: The base restoration is to be even with the top surface of the existing rigid base adjacent to the opening unless otherwise specified or directed. Where the rigid base is more than eight (8) inches below the street

surface, the base material may be poured or reset to a level consistent with the recommended asphalt pavement thickness.

7.4.1.1 Portland cement concrete bases: *Rigid Portland cement concrete bases are to be restored in accordance with Section 6.0 RESTORING PORTLAND CEMENT CONCRETE (PCC) STREET SURFACES.* Portland cement concrete base panels shall be given a textured finish. Curing compounds containing waxes are not allowed.

7.4.1.2 Brick and cobblestone bases: When brick or cobblestone bases are to be restored, they should be restored in accordance with Section 6.0.

7.4.2 T-Cuts: Where there is a rigid base, the overlay shall be removed for a minimum of twelve (12) inches beyond each edge of the opening. A T-cut is not required on a rigid base pavement if the asphalt overlay thickness is such that the T-cut would only expose asphalt, not the concrete base. If an opening in pavement with a rigid base is not T-cut, then SDOT will T-cut the opening and all costs will be paid by the permittee or contractor for removal and restoration.

7.4.3 Depth of pavement restoration: The depth of the wearing course is to be a minimum of two inches of Class A asphalt or Superpave equivalent compacted over the rigid base thickness outlined in Section 6.4.2.

7.5 Restoring asphalt/flexible base and chip seal (BST) pavements:

7.5.1 Base restoration: The surface restoration shall be placed over a minimum of six (6) inches of compacted crushed rock (Mineral Aggregate Type 2) over compacted subgrade.

7.5.2 Depth of asphalt pavement restoration: The depth of flexible asphalt pavement restoration is to be:

7.5.2.1 Bus routes: two (2) inches of Class A asphalt over eleven (11) inches of Class E asphalt, or match the thickness of the existing material, whichever is greater.
7.5.2.2 Arterial streets in commercial or industrial areas: two (2) inches of Class A asphalt over 11 inches of Class E asphalt, or match existing if greater.
7.5.2.3 All other arterial streets: two (2) inches of Class A asphalt over seven (7) inches of Class E asphalt, or match existing if greater.
7.5.2.4 Non-arterial streets in industrial or commercial areas--two (2) inches of Class A asphalt over seven (7) inches of Class E asphalt, or match existing if greater.
7.5.2.5 Non-arterial streets in residential areas--three (3) inches of Class A asphalt, or match existing if greater.

These values can be modified based on an SDOT-approved paving design using the 1993 AASHTO Guide for Design of Pavement Structures (AASHTO Pub. No. GDPS-4, available on-line at https://www.transportation.org/publications/bookstore.nsf). All pavement designs shall be reviewed for approval by SDOT Roadway Design Section staff.

7.6 Types of asphalt mixes: The wearing course shall be Class A asphalt or Superpave equivalent as approved by SDOT. The base course, where applicable, shall be Class E asphalt or Superpave equivalent as approved by SDOT. On small openings, Class A asphalt may be substituted for Class E asphalt.

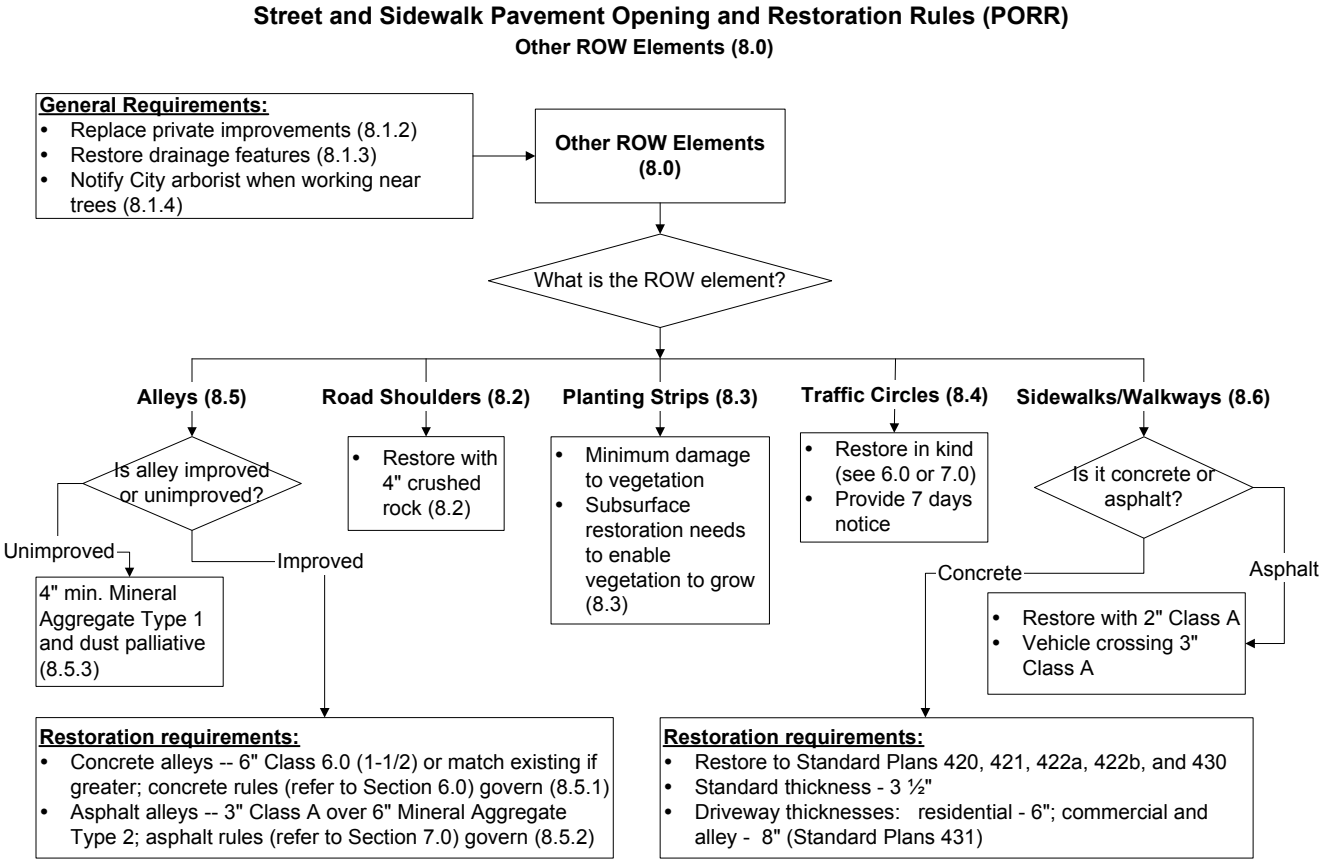
7.7 Match existing: The wearing course shall match the asphalt grade and elevation of the existing street surface outside of the area of the opening. Where, in the past, an asphalt wearing course has been placed on a concrete base pavement, SDOT may direct the permittee or contractor to construct the pavement as a Portland cement concrete pavement.

7.8 Surface smoothness: Compacted asphalt overlays shall be uniform in texture, true to crown and grade and free from defects of all kinds. The compacted surface of the wearing course shall not deviate more than 1/8 inch from the lower edge of a 10-foot straightedge placed on the surface parallel to the centerline. The transverse slope shall not deviate more than 1/4-inch from the lower edge of a 10-foot straightedge placed at right angles to the centerline. When surface deviations in excess of these tolerances are detected, they shall be corrected by adding asphalt concrete to low spots; grinding high spots; or, by removing and replacing the wearing course as may be necessary. See Standard Specifications, Section 5-04.3(13).

8.0 RESTORING OTHER STREET RIGHT-OF-WAY ELEMENTS

8.1 General: A summary of this section appears in Figure 7.

FIGURE 7



8.1.1 References: The provisions of Sections 4.0, 5.0, 6.0 and 7.0 concerning backfill, temporary and interim surfaces, asphalt pavement restoration and Portland cement concrete restoration apply as appropriate. See also the relevant Standard Specifications and Standard Plans cited in those sections, and also Standard Plan Nos. 403 (cement concrete alley pavements), 410-412 (concrete curbs), 415 (traffic circle details), 420-421 (sidewalks), 422a and 422b (curb ramps), 424 (tree pits) and 430-431 (driveway landings).

8.1.2 Private improvements: Private improvements in the street right-of-way, such as plantings, irrigation systems, paving treatments, and driveways are to be safeguarded from damage or restored in-kind or better. Where trees and shrubs are irreparably harmed, restoration shall be completed in accordance with Standard Specifications, Section 1-07.16(2). The SDOT Arborist may be consulted for plant restoration appraisals, call 206-684-5047.

8.1.3 Drainage, erosion control and designated environmental critical areas: Restorations in the street right-of-way shall be in kind and shall not adversely affect the drainage features of the roadway from the condition that existed prior to construction. Erosion and sediment controls shall comply with Section 3.2.

Restoration of vegetation shall be in-kind, unless the SDOT Director has approved otherwise. Where restoration is undertaken in an area designated as an Environmentally Critical Area in SMC Chapter 25.09, then policies and regulations of that chapter also apply.

8.1.4 Trees. Openings and restorations within the drip-line of a tree shall be undertaken in a manner that minimizes damage to the tree (see Standard Plan Nos. 132 and 133). Tree root pruning or other tree trimming will only be approved where necessary to minimize damage or otherwise mitigate impacts. Excavating or augering within five (5) feet of a tree trunk requires prior approval of the SDOT Arborist, call 206-684-5047 for consultation. Any such excavation will require special care (e.g. hand work or use of air spades) with the objective of retaining intact all roots two (2) inches or larger in diameter. Tree protection measures such as trunk wrap, tie-up of low limbs, installing protective construction fencing, applying a 4-6 inch protective layer of mulch, or using rigid boards or steel plates to span root areas may be required whenever construction occurs within the drip-line of a tree. When a sidewalk is to be restored, SDOT may, within the opening, direct changes in tree pit size, planting strip width or sidewalk grade in order to mitigate concerns for tree roots. For more information about working in and around, and protecting tree roots, see Standard Specifications, Section 1-07.16(2).

8.2 Unimproved road shoulders: Unimproved road shoulders shall be restored with crushed rock (Mineral Aggregate Type 1) to a compacted depth of four (4) inches. Substitutions of materials will be permitted by SDOT provided the materials meet quality, environmental and grading requirements (see Standard Specifications, Sections 4-01.2 and 9-03).

8.3 Planting strips: When working in areas identified or serving as natural open space, or in a planted or otherwise improved landscape area of the street right-of-way, the work shall be conducted in a manner that minimizes removal or damage to vegetation and all associated improvements. The subsurface restoration shall be completed in a manner that enables the vegetation to continue to grow, i.e. it may be necessary to bring the excavation up to grade with crushed rock or native material, and then to finish with topsoil, permeable growing materials, or mulch, to match existing and as appropriate. Additional protections, such as root barriers, may be required.

8.4 Traffic circles: Traffic circles shall be restored in-kind. Seven (7) days' notice is required prior to working in a traffic circle. (The lead-time is necessary for SDOT to coordinate with volunteers who maintain the plantings in the traffic circles; with advance planning valuable plantings can be temporarily relocated, thus avoiding expenses for new plantings).

8.5 Alleys:

8.5.1 Improved alleys: Portland cement concrete alleys are to be restored as non-arterial residential streets (Section 6.0). Pavement thickness shall be six (6) inches or to match existing pavement, whichever is greater.

8.5.2 Asphalt alleys: Asphalt/flexible base or Chip Seal (BST) alleys are to be restored as non-arterial residential streets (Section 7.0). Asphalt concrete alley pavement thickness shall be a minimum of three (3) inches of Class A asphalt over six (6) inches of compacted Mineral Aggregate Type 2, or to match existing thicknesses if greater.

8.5.3 Unimproved road surfaces and unimproved alleys: Untreated road or alley surfaces (crushed rock, gravel, oil mat surfaces or unimproved surfaces) shall be resurfaced with a minimum of four (4) inches of Mineral Aggregate Type 1 or other approved material per Standard Specifications, Section 4-04.3(13) and then treated with a dust palliative (such as CMS-2) per Standard Specifications, Section 4-04.3(12).

8.6 Standard Portland cement concrete sidewalks: The construction of Portland cement concrete sidewalks is detailed in Standard Specifications, Section 8-14 and Standard Plan Nos. 400, 420, 421, 422a, 422b, 423, 424, 430 and 431.

8.6.1 Sidewalk condition prior to construction: For the purposes of this section, a sidewalk segment is considered to be damaged if it is cracked, if there is a fault or other discontinuity greater than 1/2 inch, if any piece can be moved with ordinary foot pressure, or if in the view of SDOT the grade or slope of the sidewalk creates a concern for safe pedestrian passage. If the sidewalk adjacent to an opening was damaged prior to or during construction or is less than 3-yrs old, it shall be removed and replaced full width to the nearest joints that are at least five (5) feet beyond the opening.

8.6.2 Removal: Openings in concrete sidewalks shall be made by saw cutting (see Standard Specifications, Section 2-02.3(6)) at existing scribe lines, parallel and/or perpendicular to joints. The minimum length of a sidewalk opening shall be two (2) feet, or to the nearest scribe line, whichever is greater. Prior to restoration all cut edges shall be trued so that the exposed faces are plumb and straight. Whenever a sidewalk is broken out without these techniques, then it shall be removed and replaced full width to the nearest joints.

8.6.3 Restoration: A sidewalk panel shall be entirely removed and replaced to the nearest surrounding joints or sidewalk edge, or as outlined below.

8.6.3.1 Openings fifteen (15) feet or longer: Whenever a sidewalk opening extends over more than fifteen (15) linear feet parallel to the curb,

then the full width of the sidewalk shall be replaced full width to the nearest joints.

8.6.3.2 Patches in walks supported on all sides: Sidewalks may be patched, provided the concrete walk repair is bounded on each side by other properly placed concrete or asphalt pavement or other improvements that will prevent the patch from shifting. The minimum repair dimension shall be two (2) feet.

8.6.3.3 Patches in walks supported on one side: Sidewalks may be patched, provided no new or remaining portion of the sidewalk is less than four (4) feet in any dimension. If properly placed concrete or asphalt pavement or other improvements that will prevent shifting do not bound the patched area, the patch shall be expanded to the full width of the sidewalk.

8.6.3.4 Patches in sidewalks not supported on any side: Sidewalks bounded on both sides by earth planting strips, or otherwise lacking support, shall be patched full width. No new or remaining portion of the sidewalk shall be less than four (4) feet in any dimension.

8.6.4 Sidewalk thickness: Sidewalks are to be constructed to the thicknesses specified in Standard Plan Nos. 420, 421, 422a, 422b, 423, 430 and 431. In general, Portland cement concrete sidewalks are to be poured a minimum of 3 1/2 inches thick. Residential driveway landings are to be six (6) inches thick and commercial driveways and alley landings are to be eight (8) inches thick.

8.6.5 Damage to planters or other right-of-way elements: Any sidewalk area, walkway area, and associated amenities such as pavers, tree grates and plantings in tree pits or planting strips damaged by a permittee or contractor shall be removed and replaced to the extent prescribed by SDOT, at the permittee or contractor's expense (Section 3.18).

8.6.6 Opening sidewalks in emergencies: Sidewalks may be opened where an emergency repair needs to be made. A permit shall be applied for as soon as practicable after the opening has been made. Final restoration of the sidewalk shall comply with the requirements of this section.

8.6.7 Sidewalks over areaways: Especially in the Central Business District and in historic districts, the permittee or contractor shall be mindful that a sidewalk may be over or adjacent to an areaway. Public and private authorities and responsibilities for areaways are addressed in SMC15.04.015 and 15.08.010. Wherever this is a concern, the permittee or contractor shall contact SDOT.

8.6.8 Curb ramps: Curb ramp installation, replacement or retrofit necessary to meet current Americans with Disabilities Act (ADA) standards is required whenever a restoration:

- Involves any removal or construction activities within the marked or unmarked crosswalk area (extended to the property line)
- Impacts curb ramps, landings or curbs within the intersection area
- Affects access to or use of a public facility

More specific guidance and policy direction can be obtained from the Street Use Inspector or from SDOT's Pedestrian and Bicycle program's staff at 684-5377. Curb ramps shall be constructed in accordance with Standard Specifications Section 8-14.3(7) and Standard Plan Nos. 422a and 422b. Where curb ramp replacement is required, SDOT may require the permittee to submit a curb ramp layout plan for approval.

8.7 Asphalt walkways: Asphalt walkways shall be replaced with a minimum thickness of two (2) inches asphalt over a base of four (4) inches of Mineral Aggregate Type 2. Minimum thicknesses of all bike trails and vehicle crossings shall be three (3) inches of asphalt concrete over a base of four (4) inches of Mineral Aggregate Type 2.

8.8 Driveway landings: Driveway landings are integral elements of the street right-of-way and shall be restored in accordance with Standard Plan Nos. 430 and 431, Standard Specifications, Sections 8-14 and 8-19, and in accordance with Section 6.0 (Portland Cement Concrete) or Section 7.0 (Asphalt Concrete) of this Rule. Driveway landings shall not be left in three pieces (the utility restoration counts as one piece). As shown on Standard Plan Nos. 430 and 431, Portland cement concrete driveway landings shall be six (6) inches thick for residential traffic or eight (8) inches thick for commercial traffic.

8.9 Decorative treatments and special pavements: Seattle has sidewalk, gutter, alley, street, curb and other public areas with decorative or special surface treatments. In general, these areas shall be restored in kind. Exceptions and substitutions may be allowed with approval of SDOT, and may also require other approvals (such as restorations within historic districts, restorations over areaways, or restorations where the Seattle Arts Commission or local community associations have approved decorative treatments).

8.9.1 Source of supply: When needed, replacement materials must be on the job site or available for inspection prior to the start of the opening. Where possible and before opening the pavement, the permittee or contractor shall verify whether a source of replacement material exists and shall be prepared to submit samples and other information for approval as requested by SDOT or others. If original, matching materials cannot be located, the permittee or contractor shall submit an alternative restoration plan to SDOT. Permission to begin the opening will be given after the restoration plan is approved.

8.9.2 Photographic documentation: SDOT may require that the permittee or contractor photograph the existing decorative treatment or special treatment surfaces before beginning work, to aid in restoring the area to an in kind condition.

8.9.3 Mortared paving materials: Bricks, cobblestones or pavers shall be removed to a joint with the intent of salvaging as many units as possible, unless SDOT indicates there is no requirement to reuse the material.

8.9.4 Disposition of salvaged bricks, cobblestones, pavers and granite curbs: Salvaged materials are to be reused in the restoration unless otherwise approved by the SDOT Director. Salvaged materials not used in the restoration remain the property of SDOT. Their disposition will be at the direction of the SDOT Director (see Standard Specifications, Section 2-02.3(7)E).

APPENDIX A

STANDARD SPECIFICATIONS AND STANDARD PLANS REFERENCE

Available on-line at:

http://www.ci.seattle.wa.us/util/Engineering/Standard_Plans_&_Specs/index.asp

STANDARD SPECIFICATIONS

Division No ./ Title

1 - General Requirements
2 - Earthwork
3 - Production from Quarry and Pit Sites and Stockpiling
4 - Bases
5 - Surface Treatments and Pavements
6 - Structures
7 - Storm Drain, Culverts, Sanitary and Combined Sewers, Water Mains and Related Structures
8 - Miscellaneous Construction
9 - Materials

STANDARD PLANS

Series

000 - General / Legal / Miscellaneous
100 - Landscape
200 - Sewer / Drainage Appurtenance
300 - Watermain Appurtenance
400 - Street Paving & Appurtenance
500 - Signalization / Lighting
600 - Signs
700 - Pavement Markings
800 - Structures

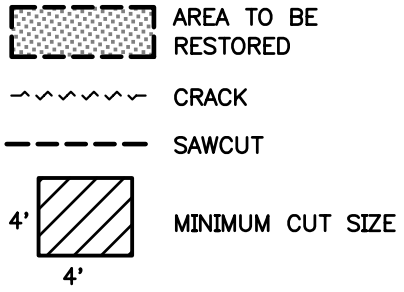
APPENDIX B

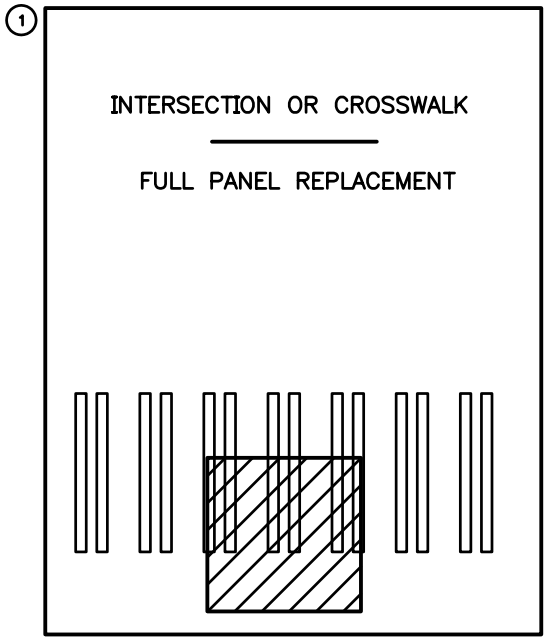
CONCRETE OR RIGID BASE PAVEMENTS

RESTORATION EXAMPLES

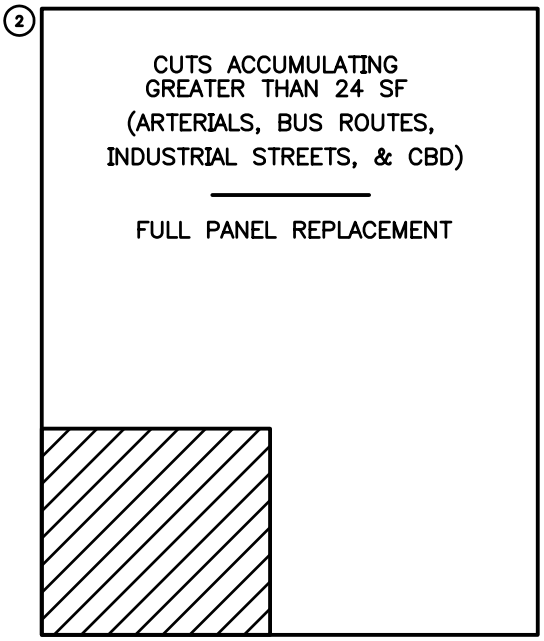
CUT EXPANSION

- EXPAND TO ANY JOINT WITHIN 4' OF CUT
- EXPAND TO ANY CURB WITHIN 2' OF CUT
- EXPAND TO INCLUDE ANY PANEL EDGES, PATCHES OR CRACKS WITHIN 4' OF OPENING
- CUTS EXPANDED TO ENSURE NEW LONGITUDINAL JOINTS ARE NOT LOCATED IN A WHEEL PATH.

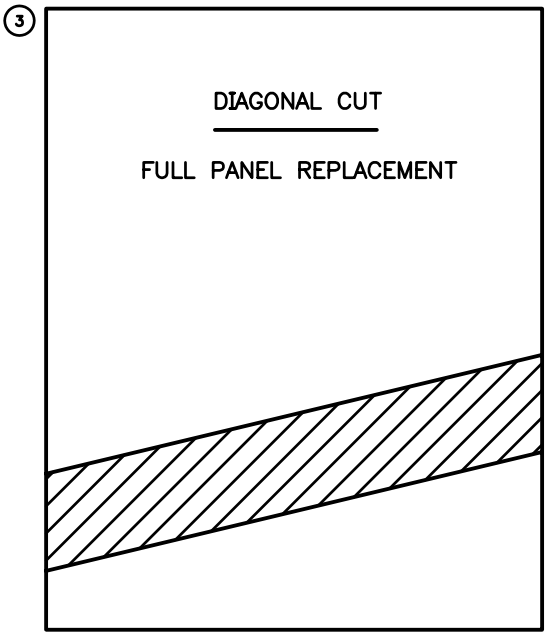




6.3.3 INTERSECTIONS AND CROSSWALKS: Full panel restoration is required on panels within the area of an intersection or in a marked crosswalk. See section 8.6.8 for associated curb ramp restoration requirements.



6.3.4 ARTERIAL CUT SIZE RULE: Full panel restoration is required any time cuts accumulate an area of more than twenty–four (24) square feet in any panel on arterials, bus routes, industrial streets and on any street in the Central Business District.



6.3.5 DIAGONAL CUTS: Full panel restoration is required Any time a panel is cut diagonally.

APPENDIX B CONCRETE OR RIGID BASE PAVEMENTS

RESTORATION EXAMPLES

CUT EXPANSION

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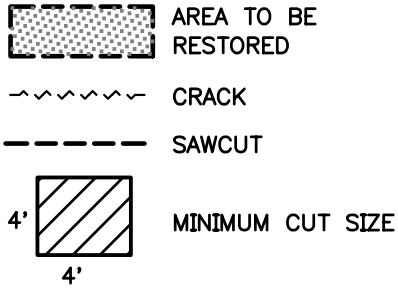
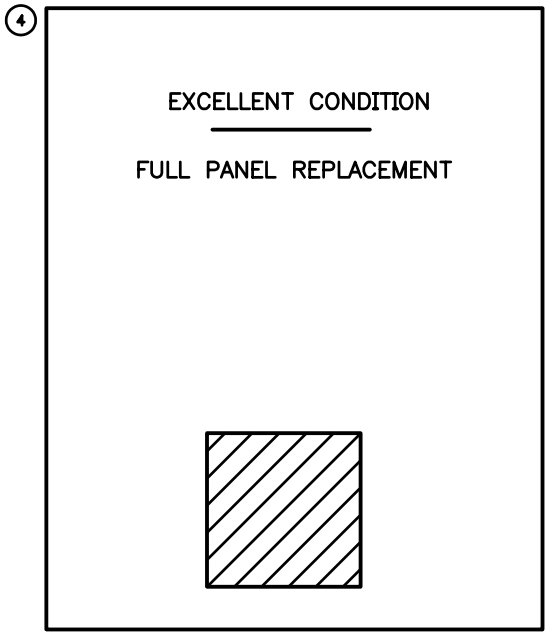
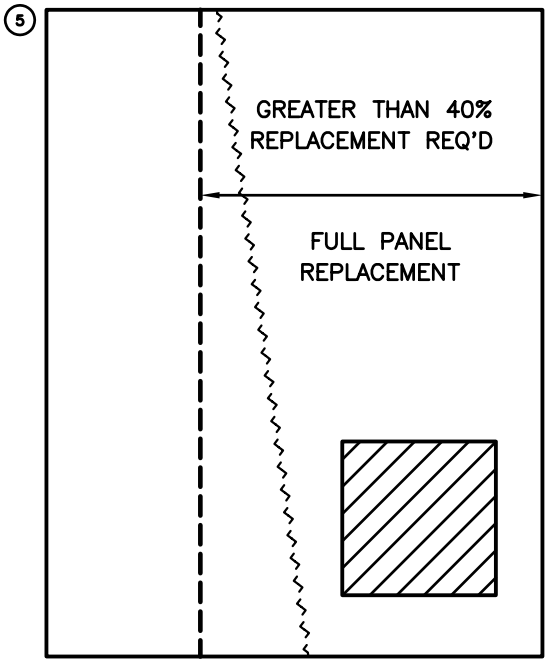
- EXPAND TO ANY CURB WITHIN 2' OF CUT
- EXPAND TO INCLUDE ANY PANEL EDGES, PATCHES OR CRACKS WITHIN 4' OF OPENING
- CUTS EXPANDED TO ENSURE NEW LONGITUDINAL JOINTS ARE NOT LOCATED IN A WHEEL PATH.

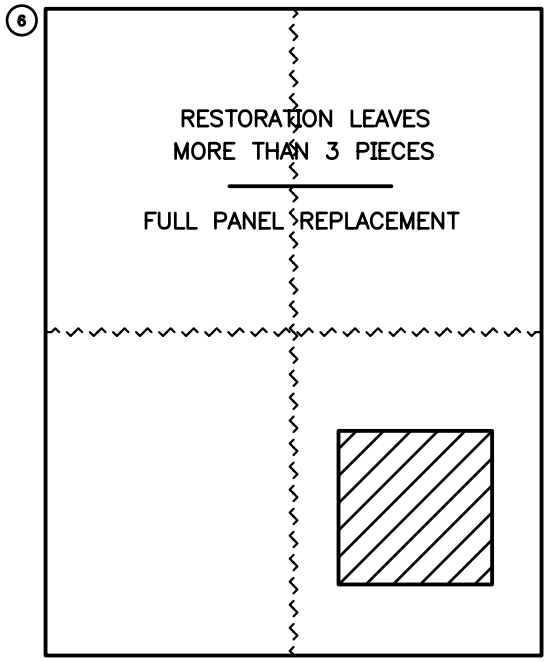




6.3.6 PANELS IN EXCELLENT CONDITION: Panels in excellent condition are to be completely removed and replaced. Panels in excellent condition are panels that were in one piece (i.e. without patches or cracks) prior to removal.



6.3.7 FORTY (40%) PERCENT RULE: A portland cement concrete street panel is to be replaced in its entirety whenever a cut removes (or requires removal of) more than forty percent (40 %) of the panel. The replacement area shall determine the area calculation.



6.3.8 THREE (3) PIECE RULE: When a cut and ensuing restoration would leave a panel in three or more parts, regardless of prior condition, the entire panel shall be removed and replaced. A patch shall count as one piece. This rule shall also apply to driveway landings.

APPENDIX B CONCRETE OR RIGID BASE PAVEMENTS

RESTORATION EXAMPLES

CUT EXPANSION

- EXPAND TO ANY JOINT WITHIN 4' OF CUT
- EXPAND TO ANY CURB WITHIN 2' OF CUT
- EXPAND TO INCLUDE ANY PANEL EDGES, PATCHES OR CRACKS WITHIN 4' OF OPENING
- CUTS EXPANDED TO ENSURE NEW LONGITUDINAL JOINTS ARE NOT LOCATED IN A WHEEL PATH.

AREA TO BE RESTORED

CRACK

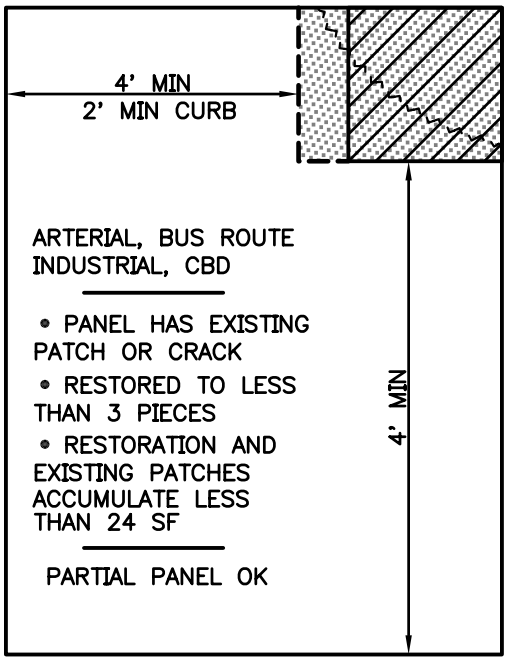
SAWCUT

4' MINIMUM CUT SIZE

4'

4'

⑦

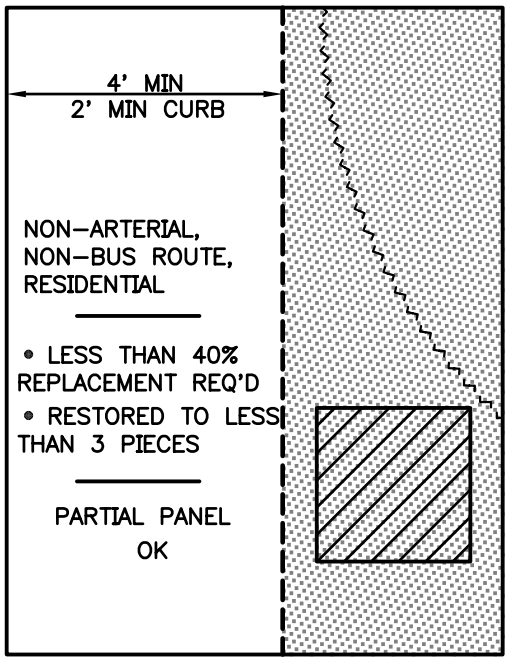


ARTERIAL, BUS ROUTE INDUSTRIAL, CBD

- PANEL HAS EXISTING PATCH OR CRACK
- RESTORED TO LESS THAN 3 PIECES
- RESTORATION AND EXISTING PATCHES ACCUMULATE LESS THAN 24 SF

PARTIAL PANEL OK

⑧



NON–ARTERIAL, NON–BUS ROUTE, RESIDENTIAL

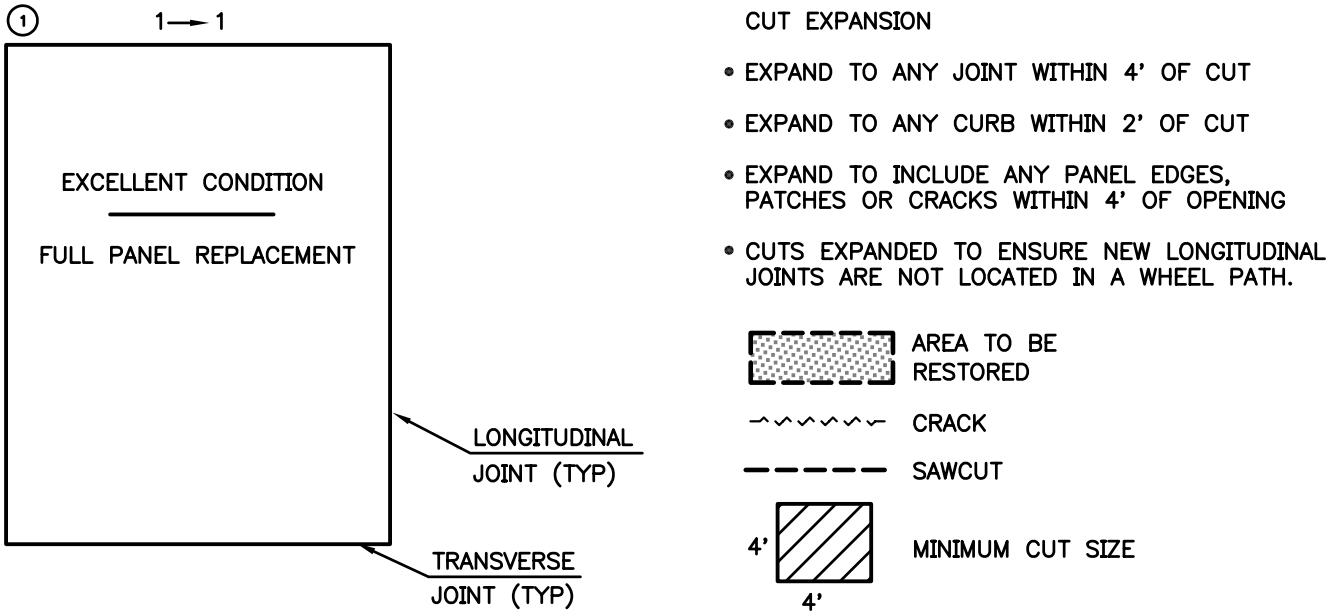
- LESS THAN 40% REPLACEMENT REQ'D
- RESTORED TO LESS THAN 3 PIECES

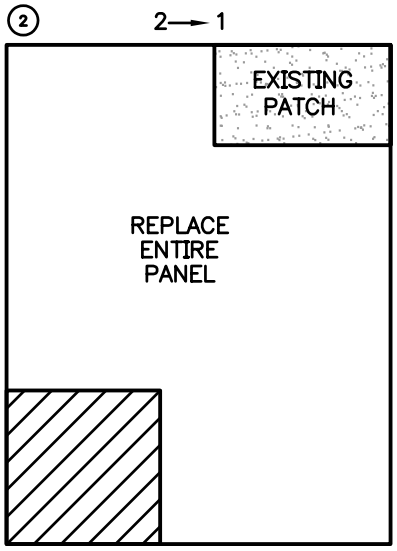
PARTIAL PANEL OK

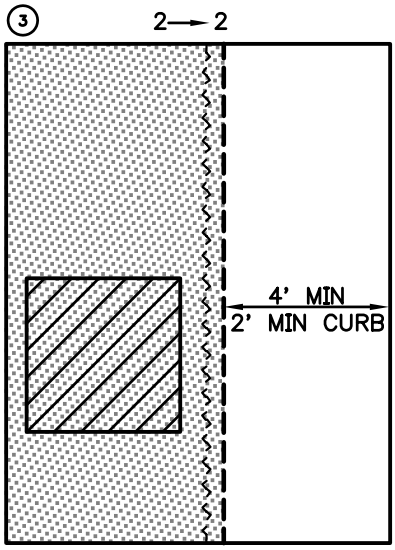
APPENDIX C

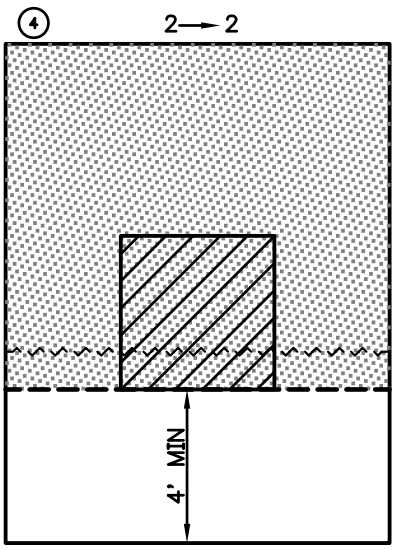
NON–ARTERIAL, NON–BUS ROUTE, RESIDENTIAL CONCRETE PAVEMENT EXCEPTION (SEE SECTION 6.3)

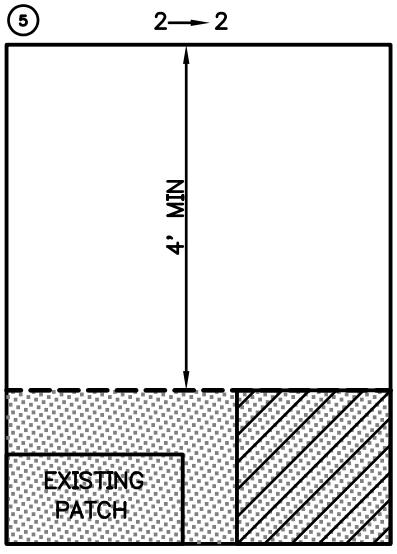
RESTORATION EXAMPLES

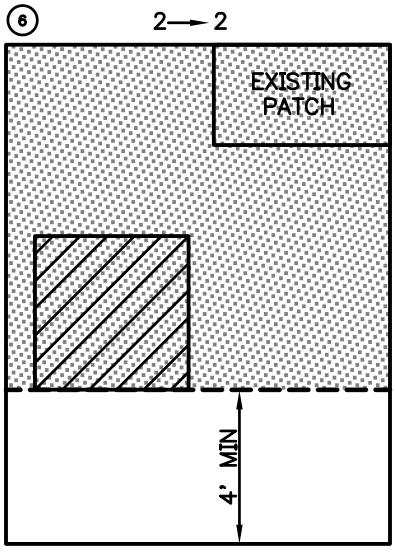


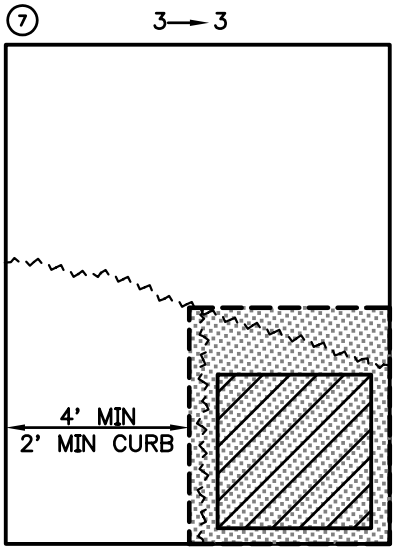












APPENDIX C

NON–ARTERIAL, NON–BUS ROUTE, RESIDENTIAL CONCRETE PAVEMENT EXCEPTION (SEE SECTION 6.3)

RESTORATION EXAMPLES

CUT EXPANSION

- EXPAND TO ANY JOINT WITHIN 4' OF CUT
- EXPAND TO ANY CURB WITHIN 2' OF CUT
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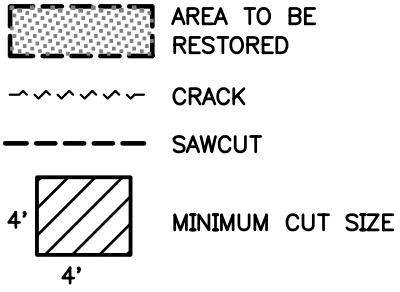

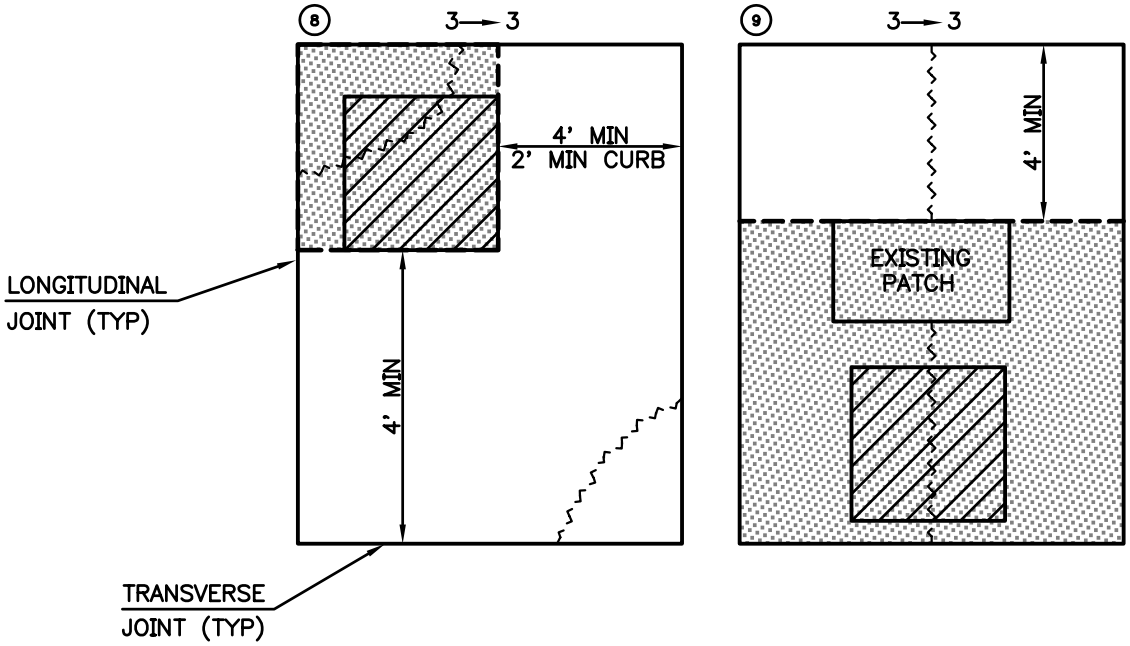

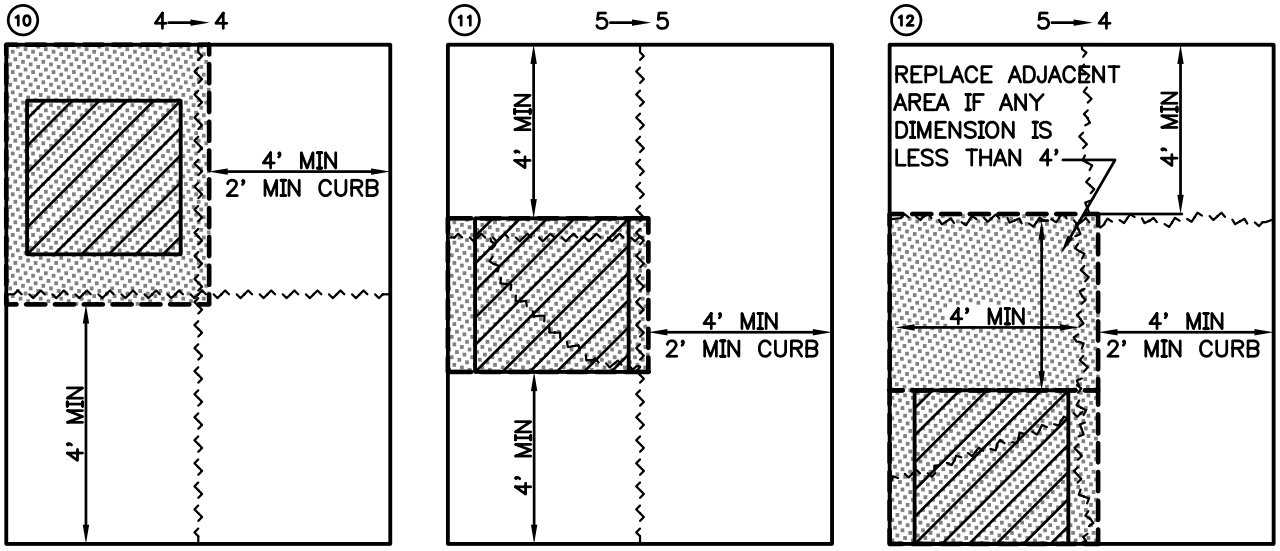

APPENDIX D

ASPHALT/FLEXIBLE BASE PAVEMENT
RESTORATION EXAMPLES

CUT EXPANSION

- EXPAND TO ANY CURB, PAVEMENT EDGE, EXISTING CRACK OR PATCH WITHIN 2' OF CUT
- CUTS EXPANDED TO ENSURE NEW LONGITUDINAL JOINTS ARE NOT LOCATED IN A WHEEL PATH.

AREA TO BE RESTORED

CRACK

SAWCUT

3' MINIMUM CUT SIZE

3'